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Why do Traditional Performance Management Systems in Healthcare not always lead to Improved Performance? Outlining the Unintended Consequences of the Greek Healthcare Reform in a Public Hospital through a Dynamic Performance Management Approach.

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Abstract

Researchers all around the globe have not yet come to an end as regards the supposed positive impact of traditional performance management systems in healthcare, and some research has shown that, paradoxically, performance management policies do not always lead to improved hospital performance. Despite the extensive research identifying the "pitfalls" of the NPM reforms around Europe and the unintended consequences for hospital staff and patients, little is known about the mechanisms that caused those negative effects, which essentially creates a research gap worth investigating. This PhD study tries to address this gap and show why do traditional PM Systems in healthcare not always lead to improved performance, by outlining the unintended consequences of the Greek healthcare reform in a public hospital. By conducting empirical research using a case-study, and by adopting a systemic perspective, this research addresses this gap and sheds light on how hospital performance is perceived by stakeholders of a Greek public hospital and what mechanisms drive its dynamic behaviour. Following a systemic approach, the selected case study - which is a real hospital in the Greek Healthcare system - allowed us to investigate the causing mechanisms of the negative consequences of the Greek healthcare reform on the performance of the case hospital. In doing so, we framed our analysis using the *Dynamic Performance Management* methodology.

Recently, researchers have started to see those negative outcomes as "system pitfalls", occurring from the non-linear interconnection and the dynamic interaction of the different elements and factors that comprise the health system and the healthcare institutions, i.e., their structure, the policies implemented, the behaviour and the decisions of healthcare workers and patients inside this system. The implementation of a systemic performance assessment methodology in Healthcare is sponsored by many recent scholarly contributions in the field (Arnaboldi et al., 2015; Costanza et al., 2014; Bivona, 2010, 2015; Bivona & Cosenz, 2017a, 2017b; Bivona & Noto, 2020; Davahli et al., 2020; Franco-Santos & Otley, 2018; Fryer et al., 2009; Helal, 2016; Renmans et al., 2017; Mwita, 2000; Noto et al., 2020; Vainieri, Ferrè, et al., 2019; Vainieri, Noto, et al., 2020; Wang et al., 2020). Adopting a systemic perspective means taking as a unit of analysis the organisation as a whole, and not one unit or department; acknowledging its internal and external environment and culture in which health care is performed; and considering the concurrent existence of the pitfalls documented as inherent to the structure of the system and the policies implemented. Studies using such a methodology would be necessary in order to address the gap in existing knowledge, as well as to support policy-makers in designing better, more quality-oriented healthcare policies, interventions and reforms in the future.

The purpose of this study was to empirically conceptualise a qualitative model of hospital performance as perceived by stakeholders of a Greek public hospital and use the DPM analysis in order to help policymakers in Greece re-design performance management policies and foster hospital performance. We adopted a systemic, participatory, inductive and dynamic approach by combining the *Group Model Building* and *System Dynamics* methodologies into the *Dynamic Performance Management* approach (Bianchi, 2016). Other research traditions identified in our study are the *Stakeholders Theory* and *Participation*. All those approaches stand in the constructivist side of the continuum as research approaches, because they all consider realities as subjective,

complex and multi-layered, actively shaped by perceptions and opinions of stakeholders (De Gooyert, 2019; Lane & Schwaninger, 2008). Mixed methods were used to facilitate our approach, combining primary qualitative data from two *Group Model Building* sessions; four open, unstructured preliminary interviews; and seven semi-structured, disconfirmatory interviews; with secondary, qualitative and quantitative data from a scoping literature review and from a critical literature review; as well as from official, open-access, online text-documents and closed-access, internal text-documents of the hospital's interdepartmental communication.

An open call for participation in the research was sent by email to around 70 different hospitals in the cities of Athens and Thessaloniki in Greece, and the gatekeeper was identified. Starting from the gatekeeper, snowball sampling was used to select 10 participants in the case hospital for the Group Model Building (GMB) sessions, including at least one person from each main key-stakeholder category that our extensive stakeholder analysis identified (i.e., managers, doctors, nurses, paramedics and patients), with the purpose of "eliciting" their mental models and "capturing" them in a qualitative system dynamics model (causal loop diagram). Four of the participants were also interviewed before the GMB sessions (face-to-face, one-to-one preliminary interviews). Convenient sampling was used in order to identify seven more public hospital stakeholders from other public hospitals in Greece for the disconfirmatory interviews. The data analysis included a Scoping Review of the International Literature of Performance Management in the Health Sector; a Critical Review of the Literature on the Greek Healthcare Reform; a Stakeholder Analysis; a Narrative Analysis of Preliminary Interviews and Documents; a Qualitative System Dynamics Analysis (Causal Loop Diagram) of the Simplified version of the *Conceptual Model of Hospital Performance* created during the GMB sessions; and, finally, *the Dynamic Performance Management (DPM)* analysis.

The GMB sessions helped hospital stakeholders gain a better understanding of what hospital performance is in a more systematic way; define it; show its trend (dynamic behaviour) in the hospital during the last decade in a diagram; and conceptualise it as a system, depicted as a qualitative system dynamics model of hospital performance *(CLD - Causal Loop Diagram)*. The two final versions of this CLD Model (i.e., the *Conceptual* and the *Policy Models of Hospital Performance*, available in Appendixes 21 and 22 respectively and thoroughly described in terms of the variables and links they contain in Appendix 24) are the main outputs of the GMB sessions, and formed the basis of our analysis and research findings. The *Conceptual Model of Hospital Performance* is a CLD model that depicts the actual structure of hospital performance and can be used to explain its currently low levels, whereas the *Policy Model of Hospital Performance* is extended to incorporate the policy structure, i.e., the changes in the system structure which are necessary, according to our participant stakeholders, in order to improve hospital performance.

Hospital performance was defined by the participant stakeholders as the provision of patient-centred care to the patient, with safety (for the patients and the staff); responsibility (adherence to protocols, proportions and procedures) and dignity (nice and clean facilities, reduced waiting times and no informal payments). The historical trend of the Hospital performance in the case hospital was also depicted in a diagram over time called *Reference Mode* (available in Appendix 19). The *Reference Mode* created and agreed upon by the participants showed that, despite the counterintuitive negative outcomes documented, the level of the overall performance in the case

hospital has been slightly increasing after the healthcare reform and is now stabilizing. Our research showed that the Performance Management policies introduced during the Greek healthcare reform had a negative impact on many aspects of hospital performance in general, and in our case hospital in particular. The new policies undeniably contributed to the reduction of hospital spending, but they simultaneously contributed to the deterioration of hospital service quality. Goal-setting, the main PM strategy followed by Greek public hospitals according to Law N4369/16, is until today not properly implemented in the case hospital and managers seem to treat performance objectives as completely separated from performance and quality, and to consider them totally outside of their everyday tasks. Those findings of the preliminary interviews and documents analysis were validated from the findings of the pretests, conducted before the GMB sessions.

Four of the goals that were set by the division managers of the case hospital came up during the GMB sessions and were integrated in the CLD model that the participants built: Standardization of the nursing forms of the nursing departments and units; Standardization of clinical procedures; Use of an Information System in the Interdepartmental Communication; and Application of digital signature and electronic document management. We combined our findings from the documents' analysis with the descriptions of those goals, as set by the division managers, and we informed them with the findings from our DPM *instrumental* and *objective* analysis, which allowed us identify the activities and the resources that are needed for the achievement of each of those four goals. In that respect, we found that apart from the "tangible" strategic resources identified by the managers of the case hospital (e.g., financial and human resources) as essential in the achievement of each of those four goals, *Management Capacity* - which is an *intermediate, administrative* product of the hospital, built by the public workers - was equally necessary.

Out of all the unintended negative outcomes of the Greek healthcare reform documented in the literature, we found the following seven negative outcomes to be present at the case hospital: (1) Low Quality and Safety of Services perceived by health workers and patients; (2) Low Patient Satisfaction; (3) Informal Payments; (4) High Mortality Rates; (5) Numerous Medical Errors; (6) High Nosocomial & Multidrug-Resistant Bacteria Infections Rates; (7) Low adherence to Clinical Guidelines and Treatment Protocols. Regarding those seven negative outcomes, the analysis of the simplified version of the *Conceptual Model of Hospital Quality* which the participant stakeholders created during the GMB sessions at the case hospital, showed that:

(1) Low Quality and Safety are mostly associated with the variables Survival Rate / Patients' Health Status & Quality of Life and Complications of our model, and can be explained by the dominance of the balancing loops B3 - Actual Time Available & Errors, and B4 - Actual Time Available and Adherence to Guidelines & Protocols, both of which cause those two variables to decrease as in the Limits to Success archetype, resulting at less Proper Communication & Attendance to Patients' Needs, more Errors and Complications, longer Length of Stay, higher Nosocomial Infections Rate, and, finally, to lower Survival Rate and Patients' Health Status & Quality of Life after treatment (Dynamic Hypothesis 1).

(2) Low Patient Satisfaction can be explained by the dominance of the loops B1 – Word of Mouth & Waiting Times, B2 – Patient Satisfaction & Attendance to Patients' Needs, B3 - Actual Time Available & Errors, and B4 - Actual Time Available and Adherence to Guidelines & Protocols, all of which lead to a gradual decrease and

stabilisation of Patient Satisfaction and of Hospital Reputation in the long run as in the Limits to Success archetype, resulting at less Proper Communication & Attendance to Patients' Needs, more Informal Payments for early Surgery/Admission longer Waiting List for Surgery or Admission, longer Waiting Time in ER & Outpatient Services and, finally, to lower Survival Rate and Patients' Health Status & Quality of Life after treatment. (Dynamic Hypothesis 2).

(3) The existence of Informal Payments can be explained by the Loop R2 – Informal Payments & Corruption, which leads to a perpetual increase of private spending and to the outspread of corruption between the case hospital doctors, given the good reputation of the case hospital and the long waiting lists that are already in place. This phenomenon is sustained by the current policies in place, which favour the creation of long waiting lists. However, this phenomenon is also sustained by factors external to the case hospital and to our model, such the relative tolerance of the Ministry of Health and of the authorities, and the widespread idea between patients in Greece that informal payments are necessary for a timely and proper treatment. (Dynamic Hypothesis 3).

(4) High Mortality Rates can be explained by the Loops B3 - Actual Time Available & Errors, and B4 - Actual Time Available and Adherence to Guidelines & Protocols, both of which lead to a gradual decrease and stabilisation at a low level of the Actual Time Available per Patient and of the Adherence to Guidelines & Protocols in the long run as in the Limits to Success archetype, resulting at less Proper Communication & Attendance to Patients' Needs, more Errors and Complications, longer Length of Stay, higher Nosocomial Infections Rate, and, finally, to higher Failure & Mortality Rates. (Dynamic Hypothesis 4).

(5) Numerous Medical Errors can be explained by the Loop B3 - Actual Time Available & Errors, which leads to a gradual decrease and stabilisation at a low level of the Actual Time Available per Patient and of the Adherence to Guidelines & Protocols in the long run as in the Limits to Success archetype, resulting at higher Difficulty of Shift Schedule for nurses and doctors, less Proper Communication & Attendance to Patients' Needs and, finally, to more medical, nursing and patients' Errors (Dynamic Hypothesis 5).

(6) High Nosocomial & Multidrug-resistant bacteria Infections Rates can be explained by the loops R5 – Multidrug Resistance in the General Population and B4 - Actual Time Available and Adherence to Guidelines & Protocols, both of which cause Nosocomial Infections to increase in the long run, resulting at more Complications and higher Multidrug Resistance in the General Population (Dynamic Hypothesis 6).

(7) Low Adheremce to Clinical Guidelines and Treatment Protocols can be explained by the loop B4 - Actual Time Available and Adherence to Guidelines & Protocols, which leads to a gradual decrease and stabilisation at a low level of the Actual Time Available per Patient in the long run, as in the Limits to Success archetype, resulting at increased Difficulty of Shift Schedule for nurses and doctors, low Availability of Equipment, ICT, Standard Procedures & Digital Forms and, finally, to low Adherence to Guidelines & Protocols.

In order to test those seven hypotheses, a quantified SD model (a stock-flow diagram) would be needed, as that would enable us to run simulations and test our hypothesis in different scenarios to analyse the loop dominance. Such a model is out of the scope and purposes of the present, qualitative study and is not included, but is recommended for future research. However, we used the *Dynamic Performance Management* analysis as

an alternative method, in order to: (1) identify *Strategic Resources*, *Performance Drivers* and *End Results* of hospital performance and show their role in the hospital performance management and measurement; (2) show how the time factor influences the overall hospital performance; (3) understand the contribution of each one of the four hospital divisions (the Medical, the Nursing, the Administrative & Financial and the Technical division) on the *End Results* (i.e., the final hospital services produced); (4) allow the division managers to start concentrating on the core intermediate, administrative products that divisions are required to deliver on the process that leads to the final end-results; (5) map the ultimate and intermediate services value chain provided to both external and internal users of the case hospital; (6) make performance measures (i.e., the drivers and end-results associated with the delivery of products) explicit and then link them to the goals and objectives of the division managers of the case hospital; (7) discuss the insights that the DPM analysis offers us for a sustainable Performance Management in Greek public hospitals in general, and in the case hospital in particular.

The identification of *Strategic Resources*, *Performance Drivers* and *intermediate End Results*, as well as the different *views* that our DPM analysis offered (i.e., *instrumental, dynamic, subjective, objective*) provided the hospital decision-makers with signs of potential future shift in *End Results*, and can help public hospital managers in Greece interpret and calculate the consequences of an incident or the implications of a policy; show possible discrepancies on performance; and try to mitigate it. The performance measures we identified could be helpful to foresee possible changes in the financial and clinical results of public hospitals in Greece. When framed in a wider sense than budgetary control, transaction cost drivers can provide hospital managers and policy makers in Greece with valuable information for strategic planning, such as the opportunity to identify trade-offs in space and in time (e.g., higher costs for investments and for managerial capacity building in the short-run, versus investments in equipment, ICT, and facilities that would increase performance in the long run). Thus, the performance management policies adopted at the case hospital during the healthcare reform (i.e., structure and process reforms undertaken) and their overall impact for Greek public hospitals' outputs and outcomes, can now be examined through a different "lenses" by the hospital managers; lenses that will allow them overcome the seven counterintuitive, negative outcomes documented, and align the hospital's and the different division's and departments' goals and actions to achieve improved efficiency and effectiveness, along with better hospital service quality for patients.

Statement of Originality

This thesis has not previously been submitted for a degree or diploma in any University.

To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Angeliki Lenakaki
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This work is dedicated to my grandfather, Nikolao Sfakianaki. His love for science and appreciation for University Education was what has always inspired me to pursue academic studies, and what still gives me the perseverance and willingness to continue learning.

Στον παππού μου, το Νίκο

Η αγάπη του για «τα γράμματα» και η εκτίμησή του για την επιστήμη και την πανεπιστημιακή εκπαίδευση ήταν αυτό που με ενέπνευσε να ακολουθήσω ακαδημαϊκές σπουδές και που μου δίνει ακόμα και σήμερα την επιμονή και την προθυμία να συνεχίζω να μαθαίνω.

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List of Abbreviations

Balanced Scorecard (BSC)

Dynamic Hypothesis (DH)

Dynamic Performance Management (DPM)

End Result (ER)

European Union (EU)

Greek National Healthcare System (ESY)

Group Model Building (GMB)

Intensive Care Unit (ICU)

Key Performance Indicator (KPI)

New Public Management (NPM)

Organisation for Economic Cooperation and Development (OECD)

Performance Driver (PD)

Performance Index (PI)

Performance Management (PM)

Regional Health Authorities (YPEs)

Strategic Resource (SR)

System Dynamics (SD)

World Health Organisation (WHO)

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CHAPTER 1 – INTRODUCTION

In chapter 1 we introduce our research study. More specifically, we briefly explain the research context and focus; we indicate the research planning, scale and resources; and we provide the PhD thesis outline and a brief presentation of all the thesis chapters.

1.1 Research Context

The importance of *Performance Management* (PM), the iterative process towards the achievement of the institutional goals and the enhancement of the institutional outputs and outcomes, has been well documented in the public administration literature during the last few decades as a way to *evaluate, control, budget, motivate, promote, celebrate, learn, and improve* (Behn, 2003, p.586) public services and, ultimately, public value and quality of life (Bovaird & Gregory, 1996; Bovaird & Löffler, 2003, 2009; Halachmi & Bouckaert, 1996). Acceptance and appreciation of performance measures in the public sector is at large a consequence of the *New Public Management* (NPM) approach that is gradually being adopted from governments and states worldwide (Gruening, 2001; Pollitt, 2007), in their attempt to change their bureaucratic models and move towards an *administrative modernization* (Bouckaert & Halligan, 2007; Bouckaert & Peters, 2002; Bovaird & Löffler, 2003; Elg et al., 2013). During the last two decades, public sector organisations including hospitals and other public healthcare providers have begun focusing more on outputs, incentive schemes and productivity rather than complying to laws and regulations, and the NPM reforms have provided public managers with the tools to pursue efficiency and results (Bianchi, 2013, 2016).

Research during the last few decades has illustrated the undoubted value of performance management in the health care sector. PM is generally believed to positively affect the sustainability and the quality of health systems and organisations, as many studies have shown positive correlations between PM, clinical performance and financial performance (Al-Habib, 2020; Lega et al., 2013; Organisation for Economic Cooperation and Development [OECD], 2019; Smith et al., 2009; World Health Organisation [WHO], 1986, 1999, 2010a, 2018a). In the healthcare sector, however, financial indicators are not enough to describe the overall performance of hospitals, because of the many particularities of healthcare which are not found in other sectors of production and services (Ravish, 2018; WHO, 2010b). Unlike in other industries, healthcare managers' goal is threefold: improve patient's health and well-being; maximise patient's positive experience of treatment; and minimise costs (Song & Tucker, 2016).

The economic recession of the last decade resulted in reforms of the public sector worldwide, with the purpose of reducing expenses and improving efficiency of government and public institutions. In the public healthcare sector, reforms mainly focused on improving performance in terms of: achieving better financial results; setting goals and responsibilities across the hierarchical structure of healthcare organisations; and maximising outputs, such as number of patients treated and services provided (Noto et al., 2020; Vainieri, Noto, et al., 2020). Budgetary Control was one of the first PM tools introduced during those reforms, and is still widely

used by many countries including Greece, Italy, Spain, Sweden, Denmark, New Zealand, Finland, Norway (Arnaboldi et al., 2015; Noto et al., 2020). Particularly since the onset of the 2008 financial and economic crisis, many governments started to re-centralize powers and implement control mechanisms aimed at identifying performance standards and at spending thresholds by introducing cutback management policies, i.e., policies which are contributing to a transition towards lower levels of activity and resources usage (Noto et al., 2020).

However, in many cases such policies resulted in increased workload, with fewer and demotivated staff, increasing levels of stress and fatigue, high absenteeism and labour turnover, while the bureaucracy of the audit society in which boxes must be ticked to demonstrate compliance with targets is continuing to grow (Arnaboldi et al., 2015; Funnell, 2015; Kaupa et al., 2020). Although the scale of public hospitals and primary care entities and the complexity of financial management of the public sector leads public service entities to rely their PM Systems solely on budgetary control, experience has proven that this strategy is rather narrow-sighted; provides rough cost control ignoring all the non-financial aspects of performance; and may contribute to adverse effects (Arnaboldi et al., 2015; Noto et al., 2020).

1.2 Research Focus

Although there has now been more than 40 years of experience with PM in the public sector, major challenges are still present and the expected enhancement in performance, accountability, transparency, service quality and value for money have not yet been fully realized (Noto et al., 2020; Fryer et al., 2009). There are success stories documented in a unit-level or in a departmental-level, but when looking at the organisation as a whole those successes turn into failures (Fryer et al., 2009). A growing part of literature states that - despite their compliance with well-established processes of care - traditional performance management policies might not affect or even deteriorate hospital performance and quality of healthcare services (De Vos et al., 2009; Nolan & Berwick, 2006; Werner & Bradlow, 2006; Werner et al., 2008a, 2008b; Wright & Hershman, 2014).

A special concern started to be raised by many researchers and leading scholars in the public PM field (Bouckaert & Halligan, 2007; Bovaird, 2005; Bovaird & Löffler, 2003, 2009; Fryer et al., 2009; Jarrar and Schiuma, 2007; Verbeeten, 2008) regarding the trade-off between short term and long-term goals that is apparent in all public organisations, but has even more detrimental, life threatening consequences in the healthcare institutions (Verbeeten, 2008). Furthermore, a wide range of negative consequences and “pitfalls” arising from the implementation of PM techniques have been identified in the public healthcare sector, one of the most significant ones being the sub-optimization problem, i.e., concentrating on enhancing one aspect of healthcare without taking into consideration the impact on other components of the healthcare system or organisation (Vainieri, Noto, et al., 2020). This problem is particularly relevant for public hospitals, because of the multifaceted and complex structure of hospital services, and because outputs and outcomes of hospitals are always a product of continuous and strict collaboration between different units, departments and professionals (Vainieri, Noto, et al., 2020; Noto et al., 2020).

All those findings tell us that traditional PM systems have often failed to enhance the performance of public healthcare institutions, but they tell us little about the causes of this failure. Furthermore, despite the extensive research identifying the "pitfalls" of the NPM reforms around Europe and the unintended consequences for hospital staff and patients, little is known about the mechanisms that caused those negative effects, which essentially creates a research gap worth investigating. Thus, the main research question that this research study tries to address is "Why do traditional PM Systems in Healthcare not always lead to improved performance?".

More recently researchers have started to see those negative outcomes as "system pitfalls", occurring from the non-linear interconnection and the dynamic interaction of the different elements and factors that comprise the health system and the healthcare institutions, i.e., their structure, the policies implemented, the behaviour and the decisions of people - healthcare workers and patients - inside this system, etc. For example, using a system approach to PM, Boland and Fowler (2000) demonstrated that performance measurement can create feedback loops that result in a spiralling decrease in performance. Seemingly, Al-Habib (2020) noted that cost cutting without taking into account the unintended effects may be dangerous and self-destructive, contributing to "spurious savings" and constrained treatment capacity with reduced accessibility. He concluded that future research should focus on shedding light to the "black box" of the healthcare process and the value-creation within this process, with a special attention on the outcome variables.

The implementation of a systemic performance assessment methodology in Healthcare is sponsored by many recent scholarly contributions in the field (Arnaboldi et al., 2015; Costanza et al., 2014; Bivona, 2010, 2015; Bivona & Cosenz, 2017a, 2017b; Bivona & Herrera-Daza, 2009; Bivona & Noto, 2020; Davahli et al., 2020; Franco-Santos & Otley, 2018; Fryer et al., 2009; Helal, 2016; Renmans et al., 2017; Mwita, 2000; Noto et al., 2020; Vainieri, Ferrè, et al., 2019; Vainieri, Noto, et al., 2020; Wang et al., 2020). Adopting a systemic perspective means taking as a unit of analysis the organisation as a whole, and not one unit or department; acknowledging its internal and external environment and culture in which health care is performed; and considering the interconnected and the concurrent existence of the pitfalls documented as inherent to the structure of the system and the policies implemented. Studies using such a methodology would be necessary in order to address the gap in existing knowledge regarding the causing mechanisms of the negative consequences of the healthcare reforms, which is necessary for policy-makers to design better, more quality-oriented healthcare policies, interventions and reforms in the future.

This case-based research project addresses this gap by shedding light on how hospital performance is perceived by stakeholders of a Greek public hospital and on what mechanisms drive its trend (dynamic behaviour). This research study will attempt to address the above-mentioned research question by conducting empirical research using a case-study and adopting a systemic perspective. More specifically, it will try to answer why do traditional PM Systems in healthcare not always lead to improved performance by outlining the unintended consequences of the Greek Healthcare Reform in a public Hospital. Following a systemic approach, the selected case study - which is a real hospital in the Greek Healthcare system - will allow us to investigate and test the above research question. In doing so, we framed our analysis using the *Dynamic Performance Management* methodology

(Bianchi, 2010, 2012, 2015, 2016; Bianchi et al., 1998; Bivona, 2015; Bivona & Montemaggiore, 2010; Cosenz & Noto, 2016).

The purpose of this study is to empirically conceptualise a qualitative model of hospital performance as perceived by stakeholders of a Greek public hospital and use the DPM analysis in order to help policymakers in Greece re-design performance management policies and foster hospital performance. Thus, this research attempted to address the following research questions:

1. How do stakeholders define hospital performance?
2. What are the main feedback loops driving hospital performance, as perceived by stakeholders?
3. How can those feedback loops explain the documented negative outcomes of the Greek healthcare reform?
4. What are the main strategic resources impacting hospital performance measures and what are the main performance drivers that are impacting intermediate products and end results?
5. What are the practical implications of the study for policy design in Greek public hospitals?

1.3 Research Planning, Scale & Resources

This research project, as any research project, consumes resources for its implementation, particularly: time, budget, people involved (researchers) and their skills. For this section, we followed the categorisation of Denscombe (2012, pp.109-130).

As this research is carried out as part of a PhD dissertation, the only researcher involved in the actual implementation of the research, the data collection and analysis and in the writing-up of the thesis was the PhD candidate. Advice and direction were provided by her supervisors, Prof. Enzo Bivona (University of Palermo) and Prof Etienne Rouwette (Radboud University of Nijmegen). The researcher's salary throughout the three years of her PhD was fixed, as a scholarship provided by the University of Palermo. All arrangements for her long stays abroad, and all the costs for accommodation and meals were covered by the researcher herself.

Researcher's skills are a vital resource when it comes to research, just like time and money is. Such necessary skills might include qualifications and professional skills which would help at gaining access to particular settings and people and at having the kind of insight about the situation that is crucial for the success of the research project (Denscombe, 2012, p.118). One major thing to consider is the relevance of the researchers' background in respect to the research objectives and setting. In the present study, the case of a Greek public hospital was chosen for conducting the research, and Performance Management is central to the research purposes. This is all very relevant to the researcher's background and knowledge, as the researcher and PhD candidate, Miss Angeliki Lenakaki, has specific education in management (Degree in business administration) and in hospitals management (Master's Degree in Health Services Management) and has worked for two full years as a Director of a Greek public hospital. Thus, she is very familiar with the theory but also with the practical aspects, the deficits, the procedures and the laws that apply to the Greek national health system and the Greek public hospitals. Her network and status as a former hospital director also helped her at gaining access and trust by the hospital board who authorised her to conduct her research in the case hospital. Furthermore, during the first two years of her PhD

studies she had intense coursework for two full semesters in the University of Palermo on Public Management and Performance Management systems in the public sector.

Another major factor to consider would be the capabilities and skills of the researcher to conduct qualitative research in general, and System Dynamics research, in particular. During her two Master Degrees, the researcher conducted two different qualitative research studies for her two Masters' Theses, and had substantial lessons in qualitative and quantitative research methods as well. Furthermore, during the first two years of her PhD, the researcher focused on learning the *System Dynamics* methodology and the *Group Model Building* technique by taking part into intense coursework abroad, in two acknowledged European Universities where those methodologies are taught. More specifically, she spent one full semester in the University of Bergen (Norway), learning the *System Dynamics* methodology through intense coursework, and two full semesters in the Radboud University of Nijmegen (The Netherlands), learning the *Group Model Building (GMB)* technique through intense coursework and participation in the facilitation of a number of GMB projects of the Radboud Management School. This led to a mastery of the methods and procedures she would have to use during the data collection (Group Model Building sessions) and data analysis (System Dynamics Modeling) of this research.

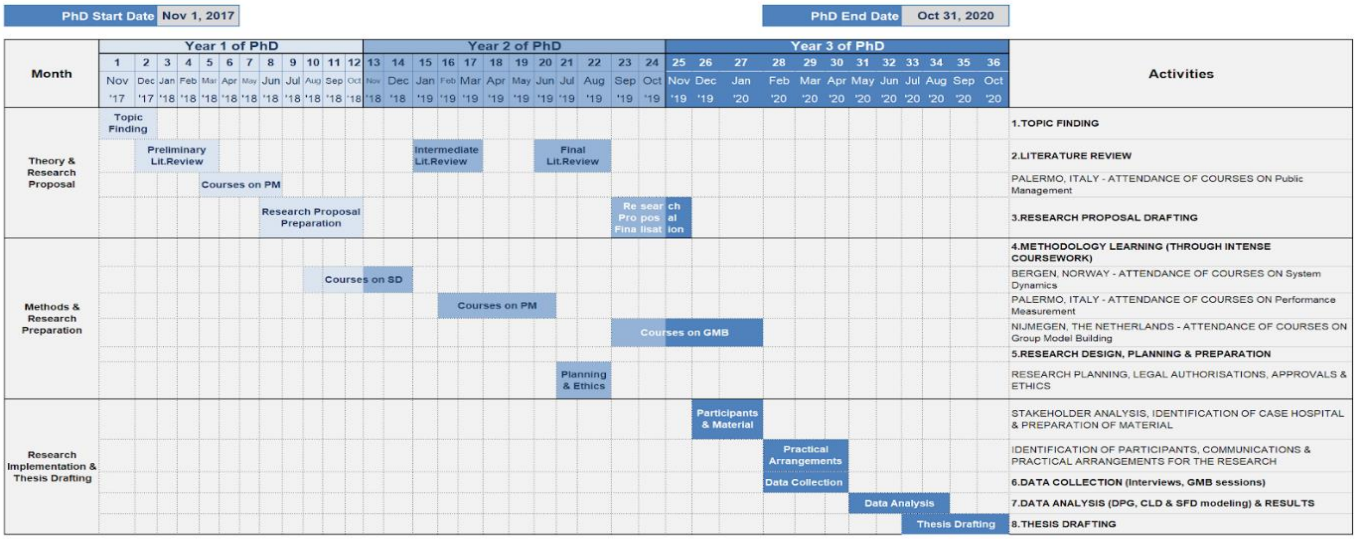
The time span of the research was exactly three years, equal to the duration of the PhD Program in System Dynamics of the University of Palermo, starting 1st November 2017 and finishing 31st October 2020. Because of the coronavirus epidemic, the deadline for the submission of the thesis was extended to 31 March 2020. The final draft of the PhD thesis had to be submitted on 18th April 2021, in order to be corrected and properly defended within the new time horizon.

Because of the special nature of this PhD course, which entails intense coursework during the first two full years on the *System Dynamics* and the *Group Model Building Methodology*, time allocated to the research project itself was not always the same. More specifically, during the first year an average of eight hours a week was spent on the research, rising to an average of 16 hours a week in the second year and finally to a minimum of 40 hours a week during the third and fourth year. This is because during the first two full years of her PhD the researcher had to travel every five to six months and follow intense coursework in the University of Palermo, in the University of Bergen (Norway) and in the Radboud University of Nijmegen (The Netherlands); thus, she had limited time to devote to research. The researcher focused on learning the methodology during those first two years by taking part into intense courses abroad in three different countries where the methodology is taught. Thus, the time devoted to the actual research had to be combined with the time devoted to lessons and to administrative procedures, practical arrangements and preparations for her stays abroad. Although time consuming, this led to a mastery of the methods and procedures she would have to use during the data collection and data analysis, thus no time was spent on those issues during the third year. Furthermore, it also led to a better time management during the last year that the actual research was implemented, as she knew better how much time she would have to devote on data collection and analysis, and to each stage of her research.

The time plan had to be carefully thought in advance, and iteratively revised every two months approximately. This is because of unexpected events (i.e., due to the coronavirus emergency) or delays that occurred related to administrative restrictions and research authorisation procedures, and because time devoted to

research had to be combined with time devoted to courses and to administrative procedures, practical arrangements and preparations for the stays abroad. Literature was constantly reviewed, and the research proposal was constantly informed by the new knowledge acquired in each stage, and finalised in the beginning of the third year. The scale of the research project is depicted on the Figure below. The main and secondary activities undertaken in each stage of the research are presented on the Figure below, and are also analytically described in Appendix 25.

Figure 1. The Scale of the Research Project



1.4 Thesis Outline

Chapter 1 provides the research context and the research focus of this PhD research study; presents the research planning, scale & resources and the thesis outline.

In chapter 2 we provide the literature review of the research study, and we present the research gap, the research questions, aim and contributions. More specifically, in the section 2.1 we introduce Performance Management (PM) in the Public Sector and we present some common definitions. Then we discuss the New Public Management move and we analyse the New Public Management Reforms of the public sector that took place during the last forty years. Finally, we present the most recent trends in PM in the public sector, and among them we highlight PM through the lens of the Systems Theory. In section 2.2 we present PM Systems in the public sector and, specifically, in the public healthcare sector. First, we present the main concepts and definitions related to PM Systems in public healthcare institutions and then we discuss how PM Systems are related to clinical outcomes and quality of care; we present the most advanced PM Systems and Performance Indicators used in public healthcare institutions nowadays; and we analyse the healthcare reforms undertaken by some countries for the adoption of PM Systems in the healthcare sector. Finally, in section 2.3 we present some international evidence on the unintended consequences of such reforms and PM systems in healthcare, and then we move on to present and explain the research gap, the research questions, aim and contributions.

In chapter 3 we introduce the research methodology and approach followed. More specifically, we present the philosophical stance of the study, the methodological approach (i.e., the *Dynamic Performance Management* approach) and the research strategy undertaken, and we briefly discuss the five research traditions identified in our study and their key features. Finally, we explain how we combined those traditions to facilitate our research purpose and how we integrated them in our research design, and we outline the most important methodological choices undertaken.

In chapter 4 we analytically present and describe the methods used to conduct our research. More specifically, we describe the data sources (i.e., literature, documents, participants); the data collection methods (i.e., documents collection, preliminary interviews, planning of GMB sessions, disconfirmatory interviews) and the material prepared and used for the data collection; the procedure of the whole research project in general and of the GMB sessions in particular; the procedures undertaken regarding gaining access to the case hospital; as well as the methods used for the data analysis.

In chapter 5 we discuss the main reasons for choosing our research approach, methodologies and methods, and for the methodological decisions in conducting our research study and in combining those methodologies to facilitate our research purposes. More specifically, we discuss the suitability of the methodological approach and research strategy to the research purpose; the feasibility of the chosen methods and their implementation; some ethical considerations; the rigour of the study; and finally, some limitations of the study stemming from the research methodology chosen.

In chapter 6 we introduce our case study and we present the Greek Healthcare Reform and its negative consequences on hospital's performance and, more specifically, on our case hospital's performance. As the focus of this research study is to contribute to identifying pitfalls and unintended consequences following the decision to adopt a PM System in healthcare organisations, we reviewed the Greek Healthcare Reform that has been recently implemented in public hospitals to improve performance of the Greek public healthcare sector. Therefore, we investigated the main pillars of the Greek Healthcare Reform and outlined the main unintended consequences reported by scholars. This chapter outlines the negative consequences of the Greek healthcare reform in Greek public hospitals in general and shows the limits of traditional PM at the case hospital in particular, while it also demonstrates the need for a dynamic performance management in the public healthcare sector. Thus, this chapter sets the grounding for the analysis and findings that will follow in the next chapters.

Chapter 7 corresponds to the first research question of our study, namely: *How do stakeholders define hospital performance.* To answer this question, we conducted the GMB sessions in the case hospital, first in order to help hospital stakeholders gain a better understanding of the low hospital performance of the hospital in a more systematic way, and second to help them collectively - through structured activities and facilitated discussions - define it; show its trend (dynamic behaviour) in the hospital during the last decade in a diagram (Reference Mode); and conceptualise it as a system, depicted as a qualitative system dynamics model of hospital performance *(CLD - Causal Loop Diagram)* perceived by hospital stakeholders during GMB sessions. The two final versions of this CLD Model, i.e., the *Conceptual Model of Hospital Performance* (analytically discussed in chapters 8 and 9) and the *Policy Model of Hospital Performance* (analytically discussed in chapter 11) are available in Appendixes 21

and 22 respectively, and thoroughly described in terms of variables and links in Appendix 24. Those two models constitute the main outputs of the GMB sessions and will form the basis of our research analysis and findings, presented in the following chapters of this thesis. The *Conceptual Model of Hospital Performance* (which is analytically discussed in chapters 8 and 9) is a CLD model that depicts the actual structure of the system at hand and can be used to explain the current low hospital performance, while the *Policy Model of Hospital Performance* (which is analytically discussed in chapter 11) is a CLD model that depicts not only the actual structure of the system at hand, but also the changes in the system structure which are necessary, according to our participant stakeholders, in order for performance to improve.

Chapter 8 corresponds to the second research question of our study, namely: *What are the main feedback loops driving hospital performance, as perceived by stakeholders.* In order to answer this question, in chapter 8 we analyse the structure of a simplified version of the *Conceptual Model of Hospital Performance* that the GMB participant stakeholders created, in terms of model loops. As the original model that our participants created (available in Appendix 21) contains a significant number of loops, and it is impossible to explicitly present and discuss all of them, the researcher created a simplified version by erasing some of the variables and causal links, in order to make it possible to identify and analyse the most basic feedback loops of the model. In section 8.1 we present this *Simplified Conceptual Model of Hospital Performance*, we explain how we created it, and then we go on to present and explain the reinforcing and the balancing feedback loops identified in this *Simplified Conceptual Model* in the next two sections. The reader of this chapter should have in mind the *Conceptual Model of Hospital Performance* (available in Appendix 21) and turn to the models' documentation (available in Appendix 24) every time that something is not clear. In Appendix 24, all the model variables and causal links of all the CLD models we created (*Conceptual Model of Hospital Performance, Simplified Conceptual Model of Hospital Performance, Policy Model of Hospital Performance*) are analytically presented, explained and discussed.

Chapter 9 corresponds to the third research question of our study, namely: *How can those feedback loops explain the documented negative outcomes of the Greek healthcare reform.* In order to answer this question, in chapter 9 we tried to explain each one of the seven main negative outcomes of the reform identified in the case hospital which we identified through the preliminary interviews and documents analysis in chapter 7 (i.e., Health Workers' and Patients' perceptions of Low Safety; Low Patient Satisfaction; Informal Payments; High Mortality Rates; Numerous Medical Errors; High Nosocomial & Multidrug-resistant bacteria Infections Rates; Lack of Clinical Guidelines and Treatment Protocols) with one *Dynamic Hypothesis* which we formed based on the model loops we identified in chapter 8 (available in the sections 8.2 and 8.3), and we show how each of the seven counterintuitive negative outcomes documented can be explained by those hypotheses.

Chapter 10 corresponds to the fourth research question of our study, namely: *What are the main strategic resources impacting hospital performance measures and what are the main performance drivers that are impacting intermediate products and end results.* In order to answer this question, in chapter 10 we performed the DPM analysis to identify those resources, drivers and indicators and show their role in the hospital performance management and measurement. More specifically, in the section 10.1 we used the DPM *instrumental view* to identify *Strategic Resources*, *Performance Drivers* and *End Results* of hospital performance. Then we moved on

to operationalise the *instrumental view* from Static to Dynamic in the section 10.2, as the "time" factor is important for our analysis, and is not easy to grasp by the static instrumental DPM view. In the section 10.3 we cascade the DPM *instrumental view* from the hospital level to a divisional level, in order to understand the contribution of each one of the four hospital divisions of the case hospital which we mentioned in chapter 6.2 (the Medical, the Nursing, the Administrative & Financial and the Technical division) on the *End Results* (i.e., the final hospital services produced) and allow the division managers to start concentrating on the core intermediate, administrative products that divisions are required to deliver on the process that leads to the final end-results. This assessment provides the ground for the *objective view* of DPM, which is analysed in the section 10.4, used to map the ultimate and intermediate services value chain provided to both external and internal users of the case hospital. In the section 10.5 we present the subjective DPM view, which is a synthesis of the instrumental and the *objective view*, and requires that performance measures (i.e., the drivers and end-results associated with the delivery of products) are made explicit, and are then linked to the goals and objectives of decision-makers of the case hospital, which we identified in chapter 6, section 6.2.1, through our documents analysis.

Chapter 11 corresponds to the fifth research question of our study, namely: *What are the practical implications of the study for policy design in Greek public hospitals*. In order to answer this question, in chapter 11 we summarise and discuss - using the existing literature - our findings and insights that the CLD models and the DPM analysis provided us with, for the sustainable improvement of the performance of the case hospital and of other public hospitals in Greece. Furthermore, we use our findings to give practical recommendations to policy makers.

Finally, in chapter 12 a number of recommendations for future research are identified, along with a number of limitations. In addition to the limitations related to the research methodology and design, described in chapter 5.5, this chapter discusses the limitations stemming from the scope of the present research and the model boundary, the implementation of the DPM approach in the case hospital and the coronavirus situation that affected it.

CHAPTER 2 – LITERATURE REVIEW

In chapter 2 we provide the literature review of the research study, and we present the research gap, the research questions, aim and contributions. More specifically, in the section 2.1 we introduce Performance Management (PM) in the Public Sector and we present some common definitions. Then we discuss the New Public Management move and we analyse the New Public Management Reforms of the public sector that took place during the last forty years. Finally, we present the most recent trends in PM in the public sector, and among them we highlight PM through the lens of the Systems Theory. In section 2.2 we present PM Systems in the public sector and, specifically, in the public healthcare sector. First, we present the main concepts and definitions related to PM Systems in public healthcare institutions and then we discuss how PM Systems are related to clinical outcomes and quality of care; we present the most advanced PM Systems and Performance Indicators used in public healthcare institutions nowadays; and we analyse the healthcare reforms undertaken by some countries for the adoption of PM Systems in the Healthcare Sector. Finally, in section 2.3 we present some international evidence on the unintended consequences of such reforms and PM systems in healthcare, and then we move on to present and explain the research gap, the research questions, aim and contributions.

2.1 Introduction to Performance Management in the Public Sector

The importance of *Performance Management* (PM), the iterative process towards the achievement of the institutional goals and the enhancement of the institutional outputs and outcomes, has been well documented in the public administration literature during the last few decades as a way to *evaluate, control, budget, motivate, promote, celebrate, learn, and improve* (Behn, 2003, p.586) public services and, ultimately, public value and quality of life (Bovaird & Gregory, 1996; Bovaird & Löffler, 2003, 2009; Halachmi & Bouckaert, 1996).

The term *PM System* is a recent concept that emerges from previous studies on *Management Control Systems* (Franco-Santos & Otley, 2018), where by *management control* researchers of the time referred to a pragmatic concern for results, obtained through people (Hofstede, 1980). Management control, in that sense, is the mechanism through which managers make sure that resources are being utilised efficiently and effectively by people in the organisation, towards the direction of the organisational targets. Control is considered essential because individuals are considered bounded by personal limitations, perceptual and cognitive biases and thus they do not always do what should be done, or what would be best for the organisation by themselves (Hofstede, 1980). Management and control is essential to make sure that people are doing well, as people might lack understanding, capability, education or important information which does not allow them to perform efficiently; and even if they do not lack any of that, they might still be unwilling to do the task assigned to them properly because of hidden agendas and personal goals that are not in line with the organisational ones (Merchant, 1982). Control in this sense is considered essential for the proper accomplishment of the organisational goals, but there are different kinds of control among which a manager can choose. In order for managers to decide upon the right method of control (i.e., routine control, expert control, judgemental control, trial-and-error control, intuitive control) for a given

activity in the organisation, four factors were considered critical: the ambiguity of the organisational objectives; the ability of measuring the outputs; the clarity of the effects of management interventions; and whether the activity is being repeated or not (Hofstede, 1980).

Later on, when computers and electronic databases started to be present in public sector organisations, control systems started to focus on the feedback mechanisms structured to maintain a predictable purpose efficiency, according to the regulations of the regional management authorities (Simons, 2007). The term *Control Systems* became a synonym of the information systems used by the public administrators to track and adjust the deviations of the corporate performance from the pre-set efficiency criteria (Simons, 2007). Control Systems, in that sense, were essential because of the complexity of processes in the organisations which obliged employees to take a sheer number of decisions by themselves. Senior management needed control systems to track down those decisions and make sure that they are consistent with the organizational goals (Simons, 2007).

Despite the different terms used throughout the years, and despite the different focus that the research in the field undertook, PM studies in the public sector has always been about the continuous strive towards enhancement, while respecting the different values, regulations and the specific complexity of the public sector organizations (Bianchi, 2013).

2.1.1 Definition of Performance Management

PM has been gaining prominence since the 1980s, and during those years it has been defined in many different ways in the literature. Thus, the definition of PM is not based on a particular factor or a short-term objective; it is a normal and ongoing process where frequent evaluation is carried out to ensure that sufficient intervention or adjustment is taken where applicable (Lee, 2019). For instance, DeNisi and Pritchard (2006) describe PM as *"a broad set of activities aimed at improving the performance of employees"*, while Vignieri (2018) defines it as *"a management style aimed at setting goals and ensuring that such targets are achieved through a planning and control cycle, embodying a set of activities, tools, and mechanisms intended to measure and evaluate results to continuously improve performance".*

International literature on PM appears to be generally twofold and concentrate either on operational control or on defining core facets of PM, such as evaluation, incentives, training and growth (Kloot & Martin, 2000; Stiles et al., 2015). As a consequence, PM definitions are also divided into two separate groups, the first one used mostly by scholars and the second one used mostly by professionals. Academics tend to define PM as a procedure, whereas practitioners tend to define it as a toolbox of practices aimed at enhancing employee productivity (Vainieri, Ferrè, et al., 2019). The academic concept of PM as a process could be generalized as the use of performance assessment to cause meaningful improvements in the organisational culture, structure and procedures by setting goals, assigning and distributing resources, advising managers to either affirm or adjust existing policies or program guidance to reach the goals, and sharing achieved results with stakeholders (Vainieri, Noto, et al., 2020).

Scholars and professionals have come up with a broad number of PM frameworks throughout the years which, again, could be divided into two basic categories: *3Es* and *IOO* frameworks (Boyne, 2002). *3Es* refer to

models and frameworks that have economy, efficiency and effectiveness in their core, while *IOO* refers to the ones that focus more on input, output and outcomes (Bianchi, 2013, 2016). Seemingly, performance in public organisations has been broadly associated with productivity, on the one hand, and with public value on the other.

Despite the different definitions and frameworks, we could say that PM simply is important in organisations because *"you can't manage what you don't measure"*[1]. Thus, PM has its roots in *Performance Measurement* (i.e., collecting and comparing data regarding various aspects of an organization's performance) and, in that sense, *Performance Measures* are the metrics based on which data is collected, whereas *Performance Indicators* are the benchmarks used to assess performance (Behn, 2003).

2.1.2 New Public Management & PM Public Reforms

Acceptance and appreciation of performance measures in the public sector is at large a consequence of the *New Public Management* (NPM) approach that is gradually being adopted by governments and states worldwide (Gruening, 2001; Pollitt, 2007). NPM considers users of public services as "clients" and public organisations as "businesses", whereas the key assumption is that effectiveness and efficiency can both be achieved in the public sector by borrowing management techniques and processes from the private sector (Osborne, 2006; Bovaird et al., 2015). The basic premise underpinning the NPM trend is that private sector companies appear to be more agile and effective than the public sector ones, and this is what marked the transition from the conventional to the modern public administration starting in the late 1970s and early 1980s in the United States and the United Kingdom (Gruening, 2001). This momentum contributed to the *New Public Governance*, after the governments of New Zealand and Australia entered the NPM movement and institutional changes on the agendas of most OECD countries followed (Vainieri, Noto, et al., 2020). NPM Reforms focused on the adoption of private sector management policies and strategies in order to increase productivity and efficiency and reduce costs, while also they became the threshold for starting rewarding employee performance rather than seniority, which had historically been the basis for promotion and compensation of public workers (Lee, 2019).

NPM can be broadly described as a set of management practices and tools which focus on efficiency and productivity (Pollitt, 2007). Subsequently, performance is a vital aspect of the NPM and PM Systems essentially became one of the distinguishing features of the NPM reforms worldwide (Pollitt & Bouckaert, 2011). During the last two decades, more and more public sector organisations have started focusing on taking note of management techniques and processes from the business sector. The claim *"do more for less"* has inspired NPM Reforms in public organisations around Europe and the world, leading the public sector to use practices and efficiency metrics of the private sector (Bianchi, 2013). Western policymakers have begun focusing more on outputs, incentive schemes and productivity rather than complying to laws and regulations and the NPM reforms have provided public managers with the tools to pursue efficiency and results (Bianchi, 2013, 2016).

The motives for the emergence of the NPM, the related reform initiatives and the degree to which they are successfully applied internationally has been widely researched, along with the effect of the 2008 global financial

[1] A quote attributed to Peter Drucker, arguably the world's most famous management consultant of all times.

crisis on the roadmap for public policy change (Pollitt & Bouckaert, 2011). Pollitt and Bouckaert (2011) are heading to the core of the matter as they say it's no longer feasible for governments to retain, for a very long time, the amount of public funding that financial investors and global markets perceive as "imprudent", and the willingness of national governments to tax is no longer as flexible as it once used to be. Nowadays, there is definitely a quest for more productivity in government operations, which explains the fact that the majority of public sector reforms have been a top-down rather than a bottom-up process. Policymakers have shifted - at least in part - from influencing public policy to inspiring managerial change and interventions. The same can be said for the position of the media and the effect that they have had, and still have, on the restructuring of public administration. The relationship between citizens and civil servants has also changed, as the pressure for accountability and transparency of public operations has grown, partly as a consequence of the increase in social networking (Pollitt & Bouckaert, 2011).

Several researchers have documented that PM programs that employ "best practice" techniques have a positive effect on the performance of public sector organizations, while also it has been noted that public sector agencies should use PM to show productivity and efficacy in their operations; increase results; and allow management to make choices, because PM acts as a preparation, collection and management mechanism to assist the agency in recognizing best practices and innovative concepts (Vainieri, Noto, et al., 2020). Naturally, the idea of PM in the public sector and of PM tools such as the famous *Balanced Scorecards* (Bianchi & Montemaggiore, 2008; Kaplan & Norton, 1996; Karra & Papadopoulos, 2005; Koumpouros, 2013) became central to the NPM approach and PM essentially became the first major step that governments and states should undertake in their attempt to change their bureaucratic models and move towards an *Administrative Modernization* (Bouckaert & Halligan, 2007; Bouckaert & Peters, 2002; Bovaird & Löffler, 2003; Elg et al., 2013).

However, there is no universal recipe for successful public management reforms and none of the NPM practices can be considered universal. Multiple control variables have been explored for their effect to performance and their relevance to the effectiveness of modern public management practices - such as, for example, fiscal arrangements and their effect on the quality of public services (Cheng et al., 2020) - but when inappropriately applied or incompetently implemented, they can lead to significant disadvantages (Arnaboldi et al., 2015; Bivona, 2010, 2015; Franco-Santos & Otley, 2018; Fryer et al., 2009; Noto et al., 2020; Vainieri, Ferrè, et al., 2019; Vainieri, Noto, et al., 2020). Thus, the kind of measures that the corporate world uses to evaluate successful businesses cannot be considered ideal for the public sector, not to mention that for-profit organisations fundamentally have different purposes than the non- profit and public ones, and *"different purposes require different measures"* (Behn, 2003, p.587).

2.1.3 Recent Trends in Performance Management in the Public Sector

Performance management is still today highly relevant in the public sector, in periods of increasing demand and diminishing funding for public institutions. Nowadays, more and more focus is being given to the reliability of performance management systems themselves; to the management styles used in the public administration, including modern public governance and neo-weberian techniques; to the various success concepts; to the output

assessment methods, using priority measurement, creation of metrics, data processing, review and reporting; as well as to the *"perverse effects"* of the usage of performance metrics (Van Dooren et al., 2015).

Behn (2003) identified eight fundamental reasons why public organisations should measure their performance: to evaluate how the public organisation performs in relation to other similar entities; to control if public workers are doing their job properly; to ensure efficient budgeting, in the sense that public money is spent well; to motivate the various stakeholders, the workers, the managers and the public in order to act to the advantage of the public organisation; to promote accountability of the organisation to decision makers, stakeholders, the press and the citizens; to celebrate critical milestones successfully accomplished; to learn from experience and decide which methods best suit the organisation and lead to better outputs; and to improve processes and results by looking at the past mistakes and doing things differently onwards. In several respects, public administrators are much more agile when choosing performance metrics than their private-sector counterparts, because in public organisations there are no universal metrics (Behn, 2003). Unlike private-sector managers, who have to comply with performance measures such as *Return on Equity* and *Growth in Market Share*, public officials are the ones who have both the potential and the obligation to choose the targets, the metrics and the performance standards. Furthermore, public managers should take into consideration the political complexities of measuring performance, as the political appointees, elected officials, senators, budget authorities, the various other stakeholders, partners, citizens and the media might have a word on that and, to some extent, they can "pre-set" performance indicators and impose them to the public officials (Behn, 2003).

In spite of the ongoing academic debate of whether transferring practices from the private to the public sector is right or not, research has shown that there are indeed core differences between public and private institutions, and those differences should be taken into consideration when designing policies and reforms to improve efficiency of public administration. For example, public agencies tend to be more hierarchical than private ones, and public administrators are shown to be less *"materialistic"* and less organisationally engaged than their peers in the private sector (Boyne, 2002). According to Pollitt and Bouckaert (2011) it is not feasible to review public administration reforms without taking into consideration the political-administrative and bureaucratic nature of a nation's arrangements. This is because national particularities and cultural differences affect the choice and execution of governance reforms and, thus, the challenge of what to measure and how still remains (Pollitt & Bouckaert, 2011). Seemingly, O'Toole and Meier (2014) indicated that the context (i.e., situational opportunities and constraints that influence the occurrence and the sense of organizational behaviour, processes, functions and relationships) is a significant aspect that impacts the public sector performance because it mediates the interaction between management and efficiency.

Context greatly affects the operational activities of HR, contributing to inconsistent execution of tasks, low quality of services provided or even low performance (O'Toole & Meier, 2014). The public sector is fundamentally dynamic and, at any given moment, the national and political environment affects management, in the sense that management decisions are dependent on political and social demands imposed on them (Lee, 2019). This can trigger contradictions between objectivity and what is believed to be the "standard", which may be arbitrary. Thus, contextual considerations cannot be ignored, as strategic decisions and procedures in the public sector can be

heavily impacted (O'Toole & Meier, 2014). Among external environmental factors, the patronage of government leaders and the power of the public and the media are found to have a beneficial effect on the performance of the public organisations (Moynihan & Pandey, 2004; Peters & Bianchi, 2020). Furthermore, among internal management decisions, the capacity to build a *"developmental"* workplace culture; to concentrate on outcomes by objectives' transparency; and to decentralize decision-making authority are all found to be positively related to public organizations' performance (Moynihan & Pandey, 2004).

Literature has demonstrated that organisations with specific goals, targets and priorities are doing better and, as goal-setting in the public sector is much vaguer than in the private sector (Moynihan & Pandey, 2005), this relative uncertainty hinders performance. Setting specific targets and making expectations explicit is required by public sector managers to help workers properly grasp what needs to be done and contribute to better results (Lee, 2019). Supportive corporate environments, combined with specific priorities and missions, are crucial for inspiring workers to succeed and this is where management plays an essential role in determining the culture of the company (Moynihan & Pandey, 2004; Peters & Bianchi, 2020). Adherence to organizational requirements and reporting is essential in the public sector to maintain oversight and accountability, with national and other regulations permeating the biggest part of the public agencies' processes (Kalgin et al., 2018).

Finally, the usage of an *Outcome-Based Approach* of PM (Bianchi, 2016; Bianchi et al., 2017; Bianchi & Montemaggiore, 2008; Bianchi & Peters, 2016; Bivona et al., 2019; Borgonovi et al., 2018) is recently highlighted to frame and determine the desirable results of the policies implemented, so as to enable policymakers not just to recognize short-term but also long-term effects. *Outputs* could be defined as the short-term end-results or products of a given policy, reform or intervention (e.g., number of patients admitted and treated, number of crimes solved, number of students graduated), whereas *Outcomes* refer to some long-term end-results which, unlike outputs, are hard - if not impossible - to be measured and directly documented (e.g., reputation, quality of hospital services, appropriateness of diagnosis and treatment, quality of education or level of knowledge of the students graduated) (Boland & Fowler, 2000; Sloper et al., 1999). Thus, public agencies should better develop O*utcome Indicators* and use them for their performance control processes (Bianchi, 2012, 2015, 2016; Bivona, 2015; Bivona, & Cosenz, 2017a; Linard et al., 2002).

According to this stream of research around outcome-based PM, public performance should be viewed not only from the standpoint of a particular unit or agency, but also from an inter-institutional standpoint (Bianchi, 2010, 2016; Bianchi et al., 2017). This decisively helps public organisations and decision makers deal with wicked issues, as much of the government planning nowadays all over the world is concerning *wicked* social problems: problems underlying elevated risk and ambiguity, and a high degree of interdependence between the factors that influence them, including multi-level, multi-actor and multi-sectoral problems (Borgonovi et al., 2018). Such problems cannot be grouped within the boundaries of a particular agency or be assigned to separate layers of government or ministries, but they should rather be dynamically defined (Borgonovi et al., 2018). In fact, unlike traditional PM approaches, outcome-based PM in the public sector uses *Systems Theory* to grasp performance dynamics and their long-term effects on outcomes (Bianchi, 2015; Bianchi & Montemaggiore, 2008; Bianchi & Peters, 2016).

2.1.4 Performance Management in the Public Sector through the Lens of the Systems Theory

Regardless of the lack of a clear connection with systems theory, public governance has long been inspired and influenced by it, as public organizations function under both external and internal limitations and there are numerous social structures even within the internal environment of a public agency that can be seen as *systems* and *subsystems*. Context is an essential aspect of systems, in which the interdependence between the internal and external environment of a public organisation influences how it functions, due to the differing flows of individuals, services and knowledge (Forrester, 1958, 1961, 1992; Scott et al., 2016). The simplicity or sophistication of a system depends on the number of components it encloses and the relationships between them (Jackson, 2000). The organisation and the external world have a fragile relationship and one should also account for the unpredictable and indefinite relationship of untransparent systems (Bedeian, 1990; Thompson & McHugh, 1995). In open systems, organisations are continuously trying to maintain a reasonably secure compromise and the sense in which they function affects what their steady state is, which compares with the supposed definite equilibrium in closed systems (Koehler, 1981).

The performance of a public entity responds to feedback from internal and external contexts and this feedback is also an important part of the philosophy of systems (Lane et al., 2010; Senge, 1989). Feedback acts as a reciprocal flow of impact in a system and - since nothing is ever affected in only one way in systems (Richardson, 2009) - feedback can be seen as both the cause and the effect of a change. A *Feedback Loop* in a system arises when a shift of a variable causes a circular shift in other variables and eventually feeds back to trigger further change in the initial variable (Forrester, 1961; Richardson & Pugh, 1981). Feedback loops are characterised as *positive* or *reinforcing* and as *negative* or *balancing*, although positive feedback is not always "good" and negative feedback is not always "bad" for the organisation's performance (Senge, 1990; Senge & Forrester, 1980).

According to Jackson and Schuler (1995) a public entity itself is a system that relies on the society for inputs (e.g. labour, raw resources, etc.), and then creates products (e.g. commodities, services) that are traded or circulated back to the society through the community and the community systems in place. Thus, environmental adjustments can contribute to subsequent operational changes and vice versa, although it would be wrong to claim that systems make only optimal decisions (Lee, 2019). In the real world, organizational adjustments rely on the policies and systems that are in place to address environmental changes; to incorporate them into their policies and reforms; and to foster organizational change, accountability and performance (Bianchi, 2010; Bianchi et al., 2010). Thus, system theorists take the view that organizations should not seek for the "best" or "optimal" solution, but should instead be ready to adjust enough to a "good enough" solution to achieve their purposes (Bianchi et al., 2010). In other words, we would say that there are no *optimal* solutions to wicked problems but only *good enough* ones, and the choice among different policies and reforms should be based on the deep understanding of the short- and as well as the long-term implications of the intended policies and, thus, on the performance of outcomes, rather than on the performance of outputs (Bianchi & Rivenbark, 2012, 2014; Bivona & Montemaggiore, 2010).

Outcome-based PM in the public sector differs from traditional PM approaches as it uses systems theory to grasp the performance dynamics and their long-term effects on outcomes (Bianchi & Montemaggiore, 2008;

Bianchi & Peters, 2016). Using this methodology, public organisations can substantially improve in their: local strategic planning; democratic policy and inter-institutional cooperation; monitoring of problems and of negative counterintuitive consequences from various public sector domains; approaches and tools that decision-makers use in tackling the complexities of performance-based governance in the public sector (Bianchi & Tomaselli, 2015; Borgonovi et al., 2018). Over the past decade, a variety of nations have begun to implement more systemic and outcome-based interventions for PM in the public sector, in order to strengthen cohesion and cope successfully with wicked issues (Bivona, 2015; Bivona & Cosenz, 2017a, 2017b; Bivona & Herrera-Daza, 2008, 2009; Borgonovi et al., 2018; Wang et al., 2020).

2.2 Performance Management Systems in the Public Healthcare Sector

Despite the rapid progress of social and economic sciences in recent decades, the global economy continues to suffer the costs of recessions, unemployment, inadequate regulation of the financial markets and mismanagement of firms, public institutions or even entire sectors. States and countries worldwide recognise the need for monitoring, measuring and evaluating the results of public institutions to help them make better decisions on the allocation of the scarce public resources, and to continuously improve their services to citizens. In the sector of public health - where the economic decisions of today affect not only the country's prosperity of tomorrow, but also the citizens' well-being, quality of life and even survival - this need becomes even more crucial.

Public healthcare systems nowadays are struggling with sustainability (i.e., maintaining quality and coverage of the population at an affordable cost) because costs have been rising due to the aging population and the rapid technological progress, which calls for a continuous renewal of the biomedical and technical equipment of healthcare organisations in order to meet the increasing patients' needs (Lega et al., 2013). Particularly after the financial crisis of the last decade, maintaining the financing thresholds appropriate to the technology innovation curve, the demographic-epidemiological curve and the citizens' expectations became a challenge for all healthcare systems around the globe (Lega et al., 2013). Societies nowadays push healthcare providers to reduce prices; politicians demand wider access and improved quality of services; and the NPM view of the patient as "customer" calls for greater responsiveness and efficiency of health services, more modern facilities and more efficient management of patient flows (Lega et al., 2013). Thus, unlike in other industries, healthcare managers' goal is threefold: improve patient's health and well-being; maximise patient's positive experience of treatment; and minimise costs (Song & Tucker, 2016).

2.2.1 Concepts and Definitions related to PM Systems in Public Healthcare Institutions

Hospital performance can be described on the basis of the achievement of a set of goals, either clinical or managerial. The end result of hospital performance is, of course, treating patients and ensuring health and quality of life, but there are many intermediate products related to the process, the structure or the outcomes which play an important role in the overall performance (Donabedian, 1988; Ravish, 2018; WHO, 2010b, 2012). For instance,

a substantial aspect of PM in the healthcare sector is the *Performance Appraisal* or *Performance Review*, i.e., the formal procedure of evaluating performance of employees (Madlabana et al., 2020).

The World Health Organisation defines PM in Healthcare as the continuous process for the identification, measurement and improvement of the performance of individuals, of teams, and of the healthcare organisation as a whole, through the coordination of all the activities according to the strategic goals (WHO, 2010a). Although in the literature of the performance of healthcare institutions the terms *PM System*, *PM Method* and *PM Practice* are interrelated and somehow mixed, there are some significant differences between them. Madlabana et al. (2020), for example, make a distinction between PM methods and PM practices in healthcare. They define PM methods as *particular procedures, processes or tools used to consolidate data on the performance of staff*, whereas they define PM practices as *the actual application and use of a PM method, as opposed to theories relating to it*. The term *PM System* is an even broader term which, in our view, encompasses both PM methods and PM practices, and goes further to encompass any other tool, software or hardware used in the implementation of PM in public healthcare institutions. PM systems in public hospitals, for example, include not only the software and hardware used to store, monitor and process clinical data, but also the protocols, the practices, tools and methods used by clinicians, nurses, health workers and administrative staff to handle patient flows; to admit and discharge patients; as well as to record and communicate with other departments and/or other entities outside the hospital (Vainieri, Noto, et al., 2020).

Figure 2. Definitions related to Performance Management. Source: Madlabana et al. (2020, p. 3)

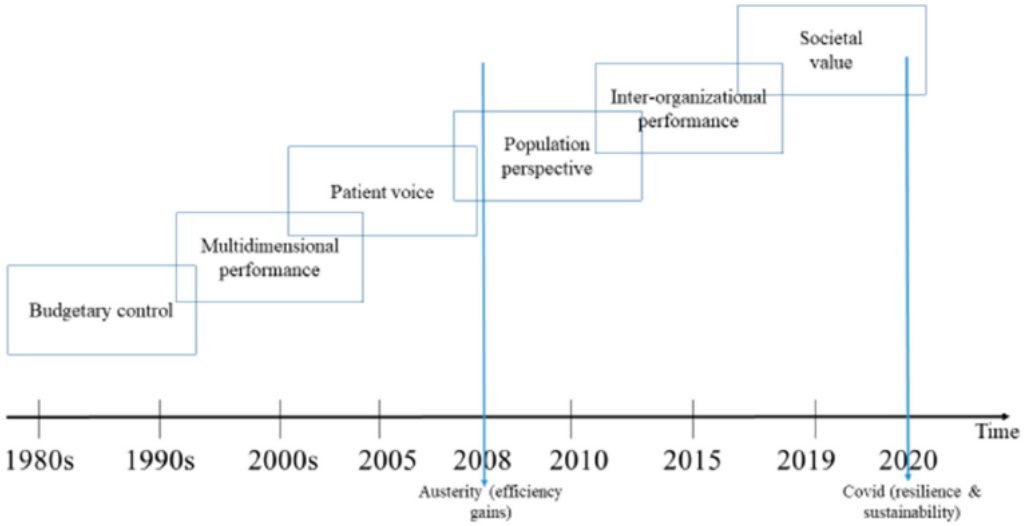
Concept	Definition	Example (s)
PM methods	PM methods refer to the particular procedures, processes or tools used to consolidate data on the performance of staff, in the case of this study, registered nurses.	- Conducting annual performance appraisals through 360 ° feedback, peer reviews, behaviourally anchored rating scales (BARS) and critical incidents.
PM practices	PM practices refer to actual application and use of a PM method, as opposed to theories relating to it.	- The above- mentioned methods are known to be effective in providing performance data; however, in practice, factors such as the users' attitude towards PM methods, training of rater and ratees as well as the provision of constructive performance feedback may impact on the overall success of a PM system.
Quality health care/quality of care	The WHO definition of quality of care is the extent to which health care services provided to individuals and communities improve desired health outcomes. Therefore, in order to achieve 'quality of care', health care must be safe, effectively, timely, efficient, equitable and people-centred.	- 'Safe: Delivering health care that minimizes risks and harm to service users, including avoiding preventable injuries and reducing medical errors. - Effective: Providing services based on scientific knowledge and evidence-based guidelines. - Timely: Reducing delays in providing and receiving health care. - Efficient: Delivering health care in a manner that maximizes resource use and avoids waste. - Equitable: Delivering health care that does not differ in quality according to personal characteristics such as gender, race, ethnicity, geographical location or socioeconomic status. - People-centred: Providing care that takes into account the preferences and aspirations of individual service users and the culture of their community.' [8]

The development of performance improvement in the health sector is strongly connected to the notion of quality, as performance seems to reflect the capacity of an organisation to produce sustainable outcomes with emphasis on both the quality of the process and the quality of the results, and for this reason modern visions and definitions of Healthcare Performance include the management of operations, services and resources used to produce those end-results (Vainieri, Noto, et al., 2020). Song and Tucker (2016) recognised the importance of a *comprehensive, system-level approach* to PM in health care institutions, and defined performance improvement as *a structured approach that uses repeated cycles of hypothesis testing to discover how processes can be modified*

so that they produce output that meets the performance target (Song & Tucker, 2016). Their view and definition is very close to our view of the PM in Healthcare, and to the purposes of this research study.

Finally, it's worth mentioning that the PM is growing and changing as the organisations and the human needs grow and change. Thus, it is no wonder that the emergence and the gradual change of the definitions and the meaning of performance in healthcare organisations is a consequence of the NPM movement, of the various advancements in other production sectors, and of events such as the Covid-19 pandemic which quickly shape public opinion and require for immediate policy making towards more resilient and adaptive healthcare systems (Vainieri, Noto, et al., 2020).

Figure 3. The evolution of Performance Management Systems. Source: Vainieri, Noto, et al. (2020, p. 2).



2.2.2 PM Systems, Clinical Outcomes and Quality of Care

Research during the last few decades has illustrated the value of PM in the healthcare sector. PM is generally believed to positively affect the sustainability and the quality of health systems and organisations (OECD, 2007; Smith et al., 2009; WHO, 2010a, 2018a). Many studies have shown positive correlations between PM on the one hand and clinical performance on the other hand, while clinical performance is found to be positively correlated to financial performance (Al-Habib, 2020; Lega et al., 2013; OECD, 2019; WHO, 1999, 2010a, 2018a).

However, in the healthcare sector financial indicators are not enough to describe the overall performance of hospitals, because of the many particularities of healthcare that is not found in other sectors of production and services. For example, the goals of the medical services are usually not specified, and it is very difficult - or sometimes impossible - to measure the social insurance utility and benefit over the out-of-pocket payments (Ravish, 2018). PM in general uses the *3E's* (i.e., economy, efficiency, effectiveness) to describe performance of the non-financial outcomes (Ravish, 2018), but in the healthcare sector there is a huge discrepancy between outputs and desired outcomes. Thus, performance measures should better concentrate on patient-centred outcomes, both short term and long term, to ensure quality of care for patients. For example, although cancer therapy costs can be

significantly reduced without any doubt by avoiding needless screenings, examinations and treatments, it is also true that for potential cancer patients *improving quality in and of itself may not lead to meaningful reductions in cost* (Wright & Hershman, 2013).

Subsequently, performance of healthcare institutions must be treated as a multidimensional marvel where financial indicators are only one part of it, and viability (i.e., integrating different viewpoints of different stakeholders) and proficiency (i.e., taking into account process and education perspectives) are other, equally important parts (OECD, 2019; Ravish, 2018). Thus, more and more countries and "umbrella" bodies within the healthcare sector have begun to underscore the value of a multi-dimensional assessment of performance in healthcare, including patient, staff and other stakeholders' evaluations (Vainieri, Noto, et al., 2020). PM systems such as the famous Balanced Scorecards (Kaplan and Norton, 1996) are being adopted by healthcare institutions all around the globe, giving to public managers the possibility to combine financial and non-financial performance metrics in the light of the overall performance, and supporting strategic goal-setting, management and monitoring of strategy implementation across the organisation (Behrouzi et al., 2014; Karra & Papadopoulos, 2005; Lin et al., 2014).

Performance of healthcare organisations is shown to be particularly sensitive to leadership styles, management strategies and methods used; managers' personality characteristics and behaviour; and culture and values of the organisation (Al-Habib, 2020; Lega et al., 2013), although there are still controversial opinions on what kind of professionals should lead healthcare institutions and what type of management style should better be followed. Al-Habib (2020), for example, conducted a systematic review on the literature around leadership and management styles in the healthcare field and their relation to performance, and found some proof that hospitals run by doctors perform better than others. Furthermore, as mentioned above, the development of performance improvement in the health sector is strongly connected to the notion of quality - as performance seems to reflect the capacity of an organisation to produce sustainable outcomes with emphasis on both the quality of the process and the quality of the results - and for this reason modern visions and definitions of healthcare performance includes management of operations, services and resources used to produce those end-results (Vainieri, Noto, et al., 2020).

The intrinsic notion that PM of hospital outputs leads to improved quality of healthcare services is still well-established among scholars and public health institutions. Quality in general, as perceived by users of a service, has five dimensions: reliability, empathy responsiveness. assurance, tangibility (Fayek, 1996; Parasuraman et al., 1985). Donabedian (1988) was the scientific father of this notion, setting the foundations of how quality in healthcare is still today defined, considered and measured. According to his conceptual model, healthcare quality has three dimensions: *structure* (human, economic and other resources); *process* (patients-providers contacts and relations) and *outcomes* (patients' level of health). Thus, quality-related measures are classified accordingly into those three main categories: *structure measures, process measures,* and *outcome measures* (Donabedian, 1988).

Since 1988, researchers have expanded Donabedian's work on how to more effectively develop, define and implement performance measures in order to promote health system as a whole (Smith et al., 2009) and improve quality of health services (De Vos et al., 2009; Mainz, 2003). As a result, the *structure, process* and *outcome*

measures of the Donabedian Model are nowadays encompassed in many of the so-called *Quality Performance Management* or *Total Quality Management* frameworks which, in effect, are PM systems with a more "holistic" perspective and a special focus on quality improvement. Such systems, especially created for health care institutions' evaluation and heavily used by public hospitals and other public healthcare providers for quality improvement purposes, include the famous *ISO*[2] , *PATH*[3], and *CAF*[4] frameworks. Those frameworks are nowadays used by a number of public hospitals and primary care centres around the world for monitoring and assessing current performance; identifying weaknesses and setting goals for quality improvement; creating policies and planning interventions for quality improvement; as well as to inform external audiences and stakeholders (Fadlallah et al., 2019; Scanlon et al., 2001).

According to Werner et al. (2008b) performance measures may be correlated to improved performance for two different reasons: first, because measuring by itself directly improves performance of the activities that are measured and, second, because those measures might act as indicators of the performance of other activities that -although not directly measured- also contribute to the improvement of the overall performance. In their study, Werner et al. (2008b) found proof that *process* measures of quality indeed act as intermediate indicators of performance of unmeasured outcomes which are more important than the measured ones, in the sense that their impact on the overall performance and quality of healthcare services is bigger.

2.2.3 Modern PM Systems & Performance Indicators in Public Healthcare Institutions

PM Systems in general are oriented towards continuous enhancement: enhancement of performance; enhancement of efficiency and effectiveness; enhancement of outputs and outcomes of public sector institutions and organisations. Organizational efficiency has been a central objective that public healthcare reforms have been trying to improve, with PM systems presumably being able to help (Bianchi & Peters, 2016).

As mentioned above, PM Systems in public hospitals include not only the software and hardware used to store, monitor and process clinical data, but also the protocols, the practices, the tools and the methods used by clinicians, nurses, health workers and administrative staff to handle patient flows; to admit and discharge patients; to record and communicate with other departments and/or other entities outside the hospital (Vainieri, Noto, et al., 2020). Furthermore, a user-friendly hospital data-management software that incorporates accurate electronic records of patients along with robust data gathering tools seem to be necessary for the monitoring of hospital performance and for the deduction of reliable conclusions, both for external and internal use (Botje et al., 2016). According to Arnaboldi et al. (2015) the most common PM systems and technologies that are used in the public healthcare sector include: *Budgetary Control, KPIs and Benchmarking, Balanced Scorecard, Lean Management* and *Managerial Checklists*. PM systems such as the famous Balanced Scorecards (Kaplan and Norton, 1996) or the ones that are more concentrated on the aspect of Quality of Care such as ISO, are adopted by healthcare institutions all around the globe to combine financial and non-financial performance metrics (Behrouzi et al., 2014

[2] https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100343.pdf
[3] https://www.euro.who.int/__data/assets/pdf_file/0003/103728/E89742.pdf
[4] https://www.eupan.eu/wp-content/uploads/2019/11/20191118-CAF-2020-FINAL.pdf

; Lin et al., 2014). BSC adoption has expanded in more and more countries over the last decade, from China (Lin et al., 2014) to Greece (Grigoroudis et al., 2012; Karra & Papadopoulos, 2005) and is shown to improve performance when properly implemented. PM systems and performance measures in general provide a universal basis for benchmarking and research, as they facilitate measurements and comparisons of efficiency, productivity and quality of outcomes of different healthcare providers (Donabedian, 1988; Mainz, 2003; Scanlon et al., 2001; Xenos et al., 2017).

According to Madlabana et al. (2020), who conducted a systematic review of the existing literature on PM practices among nurses in primary care, PM systems support three different functions: the *strategic*, the *administrative* and the *developmental* function. More specifically, the *strategic* function of PM systems involves pursuing the strategic goals through the alignment of those goals with the targets set for individual performance. The *administrative* function of PM systems involves the provision of critical data to assist managers in making crucial choices upon salaries, pay raises, bonuses, promotions and other rewards, and in mentoring workers on how to enhance their performance on a continuous basis. Finally, the *developmental* function of PM systems involves the availability of feedback on the progress of PM interventions and on the individual assessments of performance, which enables corrective actions to be taken promptly and assists the identification of supplementary measures to boost performance (Madlabana et al., 2020).

PM systems are based on measurements of inputs and outputs, combined in such a way that they form ratios or *Performance Indicators* which readily compare performance with a pre-set standard. As a consequence, a wide number of performance indicators for hospital care such as *Average Hospital Stay, Nosocomial Infections Rate, Hospital Mortality Rates* and *Nurse-Patient Ratio* or *Doctor-Patient Ratio,* developed according to the standards of WHO, OECD and Eurostat (OECD, 2007, 2019; WHO, 2012), are today adopted by almost every country all over Europe and the world and encompassed in their national PM systems. Hospitals and other healthcare providers are evaluated upon those measures through data collection, internal and external inspections, and there is a growing demand on Hospitals worldwide to report performance information in order to increase external accountability (Botje et al., 2016). Apart from the external reporting, performance indicators are necessary also for the internal monitoring of public hospitals' performance, which may also act as a way to enhance service quality and increase the overall hospital performance when the right data are gathered and used properly, in order to support the hospital's quality management practices (Botje et al., 2016). Proactivity of hospital managers, the level of engagement of the medical and the nursing staff and the reward systems linked to the PM systems of the hospital are shown to be the key to this process (Botje et al., 2016).

Rahimi et al. in 2017 attempted to identify and organise in a comprehensive way the most suitable *Key Performance Indicators* (KPIs) for hospitals, using an extensive literature review that identified 218 hospital performance indicators, followed by the experts' panel and Delphi methods to select the 22 most critical ones, which they divided into four categories based on the four BSC perspectives (Rahimi et al., 2017). Those 22 KPIs included, among others, the average length of stay, the bed occupancy, the mean length of stay in the emergency department, the mortality rate, the bed turnover, the discharge with personal satisfaction, the (ER) waiting time,

the hospital infection rate, the clinical errors, the patient satisfaction, the cost of drags and materials, the personnel costs, the staff turnover, and the facilities for families and visitors, as shown in Figure 4.

Figure 4. Key Performance Indicators (KPIs) for Hospitals. Source: Rahimi et al. (2017, p. 23).

BSC perspectives	Indicators		Indicators	
Finance (F)	F1	Ratio of total revenue to total costs	F8	the cost of drugs and materials
	F2	% Deductions of hospital	F9	%Personnel costs of total costs
	F5	Average expenditures per bed per day		
Internal Process (P)	P1	average Length of stay	P8	Discharge with Personal satisfaction
	P3	Bed occupancy	P9	Hospital infection rate
	P4	bed turnover	P10	Clinical errors
	P5	Mortality rate	P26	Mean Length of stay in emergency department
	P6	Cancelled operations	P27	Emergency Room (ER) waiting time
Learning and Growth (G)	G1	Staff satisfaction rate	G3	Training expenditures per capita
	G2	Staff turnover	G8	Employee absenteeism rate
Customer (C)	C1	The facilities for families and visitors	C3	Rate of Patient complaints
	C2	Patients satisfaction percentage		

Health workers' motivation, commitment and performance has been described as a significant factor of the overall hospital performance (WHO, 2012, 2016). The shortage of skilled healthcare staff in public hospitals, especially in low-income countries, and the extra burden that this shortage creates to the available staff along with the fragmentation and lack of coordination of the healthcare services; the ineffective use of resources; the low quality of clinical data collection and management; as well as with a number of other work-related factors (e.g., the appreciation by managers, colleagues, and the community; the organisational justice; the job stability and training) have been identified as co-determinants of health-workers' performance (Mensah et al., 2016; Suifan, 2019; WHO, 2012, 2016; Zaadoud et al., 2018). Hospital staff is composed of many different professionals and stakeholders, with nurses being the larger population arithmetically. Nurses are the chief component of the hospital workforce and, thus, successful hospital PM interventions heavily rely on nurses' skill and commitment to provide quality health care services. A well-implemented PM System may become a vital asset in ensuring that nurses are inspired, empowered and encouraged, as well as properly educated, trained and compensated (Madlabana et al., 2020).

One of the most distinctive managerial competencies refers to the capacity to design the vision, mission, long-term strategic goals and the effective diffusion of all those inside the healthcare organisation for the empowerment of the staff. Thus, information sharing, engagement of mid and low-level managers and the ability of top managers to communicate efficiently the goals and strategies are found to lead to enhanced hospital performance (Vainieri, Ferrè, et al., 2019). Engagement of doctors is critical for the success of any PM system (Botje et al., 2016; Franco-Santos & Otley, 2018) and in order to engage clinicians, hospital managers need to provide them with appropriate, structured and continuous flows of information on performance outcomes, priorities and operational goal-setting (Vainieri, Ferrè, et al., 2019). PM Systems could enormously help in this

regard, as they could provide managers and clinicians with readily usable data for performance improvement in the organisation and facilitate performance benchmarking.

2.2.4 Healthcare Reforms for the adoption of PM Systems in the Healthcare Sector

The economic recession of the 1980s intensified international markets' competition and resulted in reforms of the public sector worldwide with a dual goal: reducing expenses and improving efficiency of governments and public institutions (Van Thiel & Leeuw, 2002). As a result of this massive move towards modernisation, and in order to respond to the pressures for sustainability, PM soon became relevant in the public healthcare sector, especially for public hospitals and primary healthcare centres (Elg et al., 2013; Werner et al., 2008a).

A massive wave of healthcare reforms started to be planned and implemented in most western countries during the last four decades in order to increase performance of those structures (OECD, 2007; WHO, 2012). The first healthcare reforms mainly focused on improving performance in terms of achieving better financial results; setting goals and responsibilities across the hierarchical structure of healthcare organisations; and maximising outputs, such as number of patients treated and services provided (Noto et al., 2020; Vainieri, Noto, et al., 2020). The goal of those reforms was to address the limitations of the conventional bureaucratic paradigm that public healthcare organisations initially followed, and set productivity and effectiveness as the primary goals to be achieved by hospitals and health centres (Vainieri, Noto, et al., 2020).

According to Song and Tucker (2016), a successful PM reform in healthcare includes major changes to the basic business model of a healthcare organisation. Such changes should include the internal processes of service provision and a more innovative patient handling, which entails a higher level of flexibility and effectiveness of the interaction between patients and healthcare staff for improved results (Song & Tucker, 2016). Less effective reforms concentrate on the performance of a unit or department, rather than on the organisation as a whole, and such attempts might even have unanticipated, detrimental consequences on the overall performance (Song & Tucker, 2016). According to Arnaboldi et al. (2015) the most common PM systems and technologies that are introduced in the public healthcare sector through the healthcare reforms include: Budgetary Control, KPIs and Benchmarking, Balanced Scorecards, Lean Management and Managerial Checklists. However, all of those technologies come with a number of drawbacks, which are briefly presented in the next few paragraphs.

Budgetary Control was one of the first PM tools introduced during the reforms of the public healthcare sector, and is still widely used by many countries including Greece, Italy, Spain, Sweden, Denmark, New Zealand, Finland and Norway (Arnaboldi et al., 2015; Noto et al., 2020). Particularly since the onset of the 2008 financial and economic crisis, many governments started to implement control mechanisms aimed at identifying performance standards and spending thresholds and introduce *cutback management* policies (Noto et al., 2020). *Cutback* generally refers to policies which are contributing to a transition towards lower levels of activity and resources' usage (Noto et al., 2020). There are three main cutback management approaches: *linear cuts*, *targeted cuts* and the *quest for productivity and efficiency gains* (Ongaro et al., 2015; Pollitt, 2010). *Linear cuts* simply involve applying proportionally equivalent budgetary cuts in all public organizations affected by the policy. *Targeted cuts* suggest that certain organizations or industries should suffer bigger cuts than others affected by the

same policy. The third approach suggests that budgetary control policies should provide budgetary gains or rewards relative to an improvement in performance (Noto et al., 2020; Pollitt, 2010).

The integration of budgetary control in hospitals and other healthcare institutions acknowledges the importance of the financial health within the public sector organizations. It also reflects the centrality and interconnection of the budgetary mechanism with almost all the financial operations of public sector organizations (Arnaboldi et al., 2015). Although the scale of public hospitals and primary care entities and the complexity of financial management of the public sector leads them to rely their PM Systems solely on budgetary control, experience has proven that this strategy is rather narrow-sighted; provides rough cost control ignoring all the non-financial aspects of performance; and may even contribute to adverse effects (Arnaboldi et al., 2015; Noto et al., 2020). Furthermore, research has shown that in many cases the budgetary control was accompanied by the lack of ability to refine the historical-based budget setting practices by introducing activity-based measures, which essentially compromised the rigour of the budgetary control as a PM tool (Arnaboldi et al., 2015; Noto et al., 2020; Stuckler et al., 2017).

The accomplishment of budgetary balance may be seen as a kind of progress but in reality it is a constraint, and it certainly is not synonymous neither to the provision of quality services, nor to the efficiency or effectiveness of the health organisation's operation (Arnaboldi et al., 2015). Research has demonstrated many cases where the implementation of linear and targeted cutback management policies might have created several unintended consequences for the efficiency of health systems and for the public governance economic growth (International Monetary Fund, 2015; Legido-Quigley et al., 2016). Thus, many of the early adopters of budgetary control began to underscore the value of a multi-dimensional assessment of performance in healthcare, and more and more countries and "umbrella" bodies within the healthcare sector worldwide gradually turned to more sophisticated PM systems such as the BSC or the Lean Management.

Experience with those multidimensional PM systems, however, has shown that they also might lead to unintended consequences. BSC, for example, has been criticized in that its four dimensions (financials, internal processes, customers and learning) undervalue the complexity of most public healthcare organizations and provide nothing more than lists of indicators (Hoque, 2014; Norreklit, 2000). A number of concerns have been expressed also in respect to the application of Lean Management in the healthcare sector (Kinder & Burgundy, 2013; Radnor & Osborne, 2013), including the fact that constant emphasis on cost reduction negatively impacts the safety of healthcare services; that the high interdependence of the different units and departments that are involved in the production of healthcare services may contradict the standardization of procedures that the Lean Management entails; that concentrating on the performance of single units and divisions undermines the overall performance; and that such an approach is doomed to fail (Arnaboldi et al., 2015). For instance, this approach did fail when implemented in the English National Health System, without the availability and pre-existence of well-designed information systems at project level, inter-unit level and organisational level to support Lean Management processes, and given its *piecemeal application without an overarching service model to inform its adoption and design* (Arnaboldi et al., 2015).

Effective implementation of PM Reforms is equally important to the effective planning, and quite challenging as well, as even a well-planned reform if not properly implemented will not lead to enhanced performance (Song & Tucker, 2016). As Bouckaert and Peters (2002) famously quoted, *"Performance measurement and management can resolve certain problems but also can create new problems. Having a range of new management practices in place with inadequate or even counterproductive performance measurement and management systems may be worse than having had no reform at all".* Song and Tucker (2016) reviewed the literature around successful PM of Health service organisations and identified a number of common models used in PM of the Healthcare sector, which they criticised according to their feasibility and implicit assumptions. They synthesized their findings into a more inclusive and comprehensive model which they named *Model of Transformational Performance Improvement* (Song & Tucker, 2016). This model includes six components: specifying and discussing a system-level goal; designing and implementing system-level performance measures; recognising and handling interdependencies; choosing a set of initiatives consistent with the system-level goals; developing an infrastructure for transformation; implementing, promoting and maintaining changes (Song & Tucker, 2016).

Figure 5. Performance Management Technologies. Source: Arnaboldi, Lapsley & Steccolini (2015, p. 8).

Performance Management Technologies

	Technology	*Key Attributes*	*Comment*
1.	Budgetary Control	Traditional Accounting	Crude, limited
2.	KPIs & Benchmarking	Partial performance indicators in comparable settings	What gets measured gets included
3.	Balanced Scorecard	The Harvard model of performance management	Identifies multiple dimensions but is over specified
4.	Lean Management	The Toyota Production model	Negative side effects
5.	Managerial Checklists	An exercise in reductionism	Susceptible to box ticking legitimation

Song and Tucker (2016) also discuss common barriers to Successful Implementation of PM Reforms in healthcare institutions. They identify four main categories of barriers: barriers related to the internal environment (mainly insufficient physicians' and senior managers' support); barriers inhibited to the external environment (such as the legal environment, negative press about medical errors, payments and profitability); barriers related to the implementation process (e.g., when the final users of a new technology are not the ones who asked for it; when there is no reliable feedback on the progress and results of the reform available to the implementation team; when there is insufficient training and technical support for the new process or technology to the staff); and barriers

to the reform itself (i.e., when it is overly complicated, and when the necessary infrastructure is not in place) (Song & Tucker, 2016). When the PM reform is on a new technology and it was decided by the managers rather than by the users (top-down approach), then: (1) users/workers are not part of the design of the new PM System and there are more chances that it will be unreliable, defective or not helpful to them, and (2) users are not the ones who asked for the new technology, thus they will reject it and continue doing the work as they used to (Klein & Knight, 2005; Song & Tucker, 2016). Seemingly, Botje et al. (2016) found that Dutch hospitals frequently neglect to utilize performance measurements in their internal quality management, and thus PM is not used to its maximum potential. They also found that it is crucial for hospitals to invest in a robust information system as well as to link human resource policies with performance indicators. Unfortunately, it is also true that whatever the PM system applied, it would still have to refer to the budgetary system, considering its centrality in the operation of the public sector organizations; a dimension of performance management that is sometimes ignored and is neither easy nor straightforward (Arnaboldi et al., 2015).

Figure 6. Common barriers to successful implementation of PM reforms in healthcare institutions. Source: Song & Tucker (2016, p. 256).

Level	Barrier	Details
External Context	Improvement project misaligned with customer preferences.	Focusing on cost cutting is not appreciated by patients. Overshooting the market results in wasted improvement resources. Excessive implementation of documentation that takes times away from routine patient care.
Organizational-Level Barriers	Lack of senior leadership support. Lack of physician support.	Existing routines reinforce status quo. Lack of incentives and financial resources inhibit employees' willingness to change behaviors. Managers discontinue effort because performance is worse before it gets better.
Implementation Process	People who will use the new process or technology are not involved in adoption and/or implementation decisions. Lack of credible data for feedback. Poor implementation policies.	New technology might be unreliable or imperfectly designed. Lack of information about whether the improvement project is working as planned. Employees lack the training and support needed to successfully use the new process or technology.
Improvement Project	Overly complicated technology. Implementing new technology before necessary infrastructure is in place.	Employees do not use the technology because it does not work well or is overly complicated.

More recently, researchers have begun to turn their focus on the importance of including patient, staff and other stakeholders' evaluations (Vainieri, Noto, et al., 2020). Alasow et al. (2019), for example, have outlined the importance of the government and other agencies' involvement in the establishment of PM Systems in Somalia to increase the performance of health staff and improve the delivery of public health services. According to Zaadoud et al. (2018), public healthcare systems and organisations are complex systems characterized by: several procedures and structures within them that are not standardized and are quickly changing; numerous workers of different professions and continuous evolution of professions within the system; exceptional sociology, particularly in the field of the division of decision-making forces within the system; the quality of the services provided by practitioners, that patients cannot correctly appreciate; difficulties to recognize and measure the impact of PM systems and interventions on quality of services. It is now considered essential to plan PM reforms thinking of the organisation as a whole, in order to anticipate and take into consideration also disruptive behaviours and traditional obstacles such as resistance to change in public healthcare institutions, using *Outcome-Based*, and *Dynamic* PM interventions that promote the implementation of more versatile and far-reaching governmental structures to address those complex problems (Bianchi, 2010, 2012, 2015; Bianchi & Rivenbark 2012, 2014; Bianchi & Tomaselli, 2015; Bivona, 2015; Bivona & Cosenz, 2017a, 2017b; Bivona & Herrera-Daza, 2008, 2009; Borgonovi et al., 2018; Vainieri, Ferrè, et al., 2019; Vainieri, Noto, et al., 2020; Wang et al., 2020).

2.3 Unintended Consequences in adopting Performance Management Systems in the Healthcare Sector: Some International Evidence

Potential ineffectiveness of PM Systems was identified early on in the performance literature, when still academics were talking about *management control systems*. Hofstede (1978), for example, wrote about "*the poverty of management control philosophy"*, emphasising the fact that different processes require different control measures to be successfully implemented. Seemingly, Merchant (1990) was the first to identify the unintended negative implications of financial controls on *"management myopia"* (i.e., focussing on short term targets at the expense of the long-term objectives) and the deliberate manipulation of performance measurements by managers to present better performance.

Unintended consequences can be broadly defined as the reactive sub-version, intentionally or unintentionally, put in place by managers and decision-makers at various levels in order to 'hit the target' even though 'missing the point', or to reduce the performance where targets do not apply (Bevan & Hood, 2006; Noto et al., 2020). Van Thiel and Leeuw (2002) in their famous article "The performance paradox in the public sector" argued that there is only *"a weak correlation between performance indicators and performance itself"*, because performance indicators tend to deteriorate over time and gradually lose their significance as performance metrics, making the gap between real and recorded performance bigger and bigger. They presented a number of examples from public sector organisations where output measurements contributed to detrimental effects on performance and concluded that the public sector has a number of features and attributes that create a particularly high probability of the *Performance Paradox* to happen (Van Thiel & Leeuw, 2002). Among those features are: (1) the

big gap between the imprecise policy priorities established by the politicians and their translation into strategic goals and operational objectives set by the public officers. This translation is rather unclear and there is a lot of space for inconsistencies - sometimes deliberate ones - because this ambiguity helps politicians satisfy different stakeholders; (2) the absence of impending bankruptcy, despite the existence of gaps between expenses and revenues; (3) the fact that most public sector organizations have difficulty in calculating the precise cost of their goods and services, partly due to the fact that generation and use of public services happen simultaneously; (4) the fact that the work of civil servants, unlike private-sector employees, is significantly influenced by the interaction of public bureaucracies with political interests which are vague, complex and dynamic, creating a challenge for public workers to not only satisfy citizens but also recognize and integrate those interests in ways that maintain electoral authority and minimize political disparities; (5) the fact that there are no true penalties for public service organisations and their managers, which paves the door for them to manipulate data without any consequences. Furthermore, manipulation or distortion of performance data cannot be proven by the government alone, without the contribution of the policy-implementing agencies which have the privilege of owning the expert knowledge on policy implementation; (6) the fact that the structure of the public sector favours the creation of monopolies, which cannot be evaluated as there is no other similar organisation to compare performance with, and are hard to be substituted in case they do not perform well (Van Thiel & Leeuw, 2002).

Bouckaert and Peters (2002) came to very similar conclusions, recognising that PM systems can easily become *dysfunctional, technically weak, with low validity and reliability and low legitimacy.* They state that even if all the prerequisites for effective PM (i.e., emphasis on users of the PM system, execution plan, development of an appropriate measurement system, goal setting, compatible and effective inspection processes and a performance-oriented management framework) were adequately satisfied - which, of course, is not always the case - still *"paradoxes, dilemmas, contradictions, and trade-offs emerge during implementation"* (Bouckaert & Peters, 2002). Some of those unintended consequences that they identify in public organisations include: (1) Political challenges created by the fact that costs of PM projects are more apparent than the often intangible, yet anticipated gains of performance-based management; (2) Political challenges created by the trade-off between quantity and quality, as with a given amount of resources can be produced better quality services for less people or lower quality services for more people; (3) Problematic resources allocation between public organisations, especially in periods of crisis and focus on expenditure reductions where performance is used as a contrasting criterion of capital distribution; (4) The danger for politicians and managers of losing the "big picture", by paying attention to details and less important activities which can be directly measured and controlled (i.e., focus on outputs) rather than on what really matters, which in the public sector is usually the social value of the services produced (i.e., outcomes) which is something that cannot be easily measured nor controlled. As the authors quote, *"a helicopter view is competing with a detailed and sometimes myopic frog view";* (5) The danger of public managers and workers of demoralising and losing motivation when comparing themselves to better performers, although it is just not feasible for all public organisations to become best performers; (6) The problematic relationship between performance, satisfaction and trust by citizens, stakeholders and public managers, which is further complicated by propaganda and political talk which distorts and invalidates perceptions and expectation

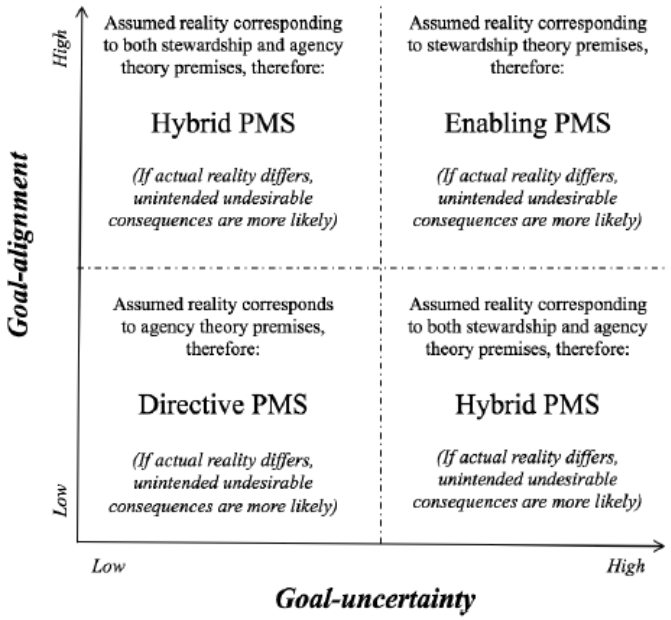
of public institutions' performance; (7) The conflict between performance and transparency, which potentially creates political tensions and might lead to hiding or not monitoring errors or information of low performance (Bouckaert & Peters, 2002).

Sanger (2012) adds more pitfalls on the list, by researching public organisations with elected or politically appointed leaders, such as municipalities. In those organisations, additional problems can occur from the fact that political officials and their appointees come and go, while civil servants stay. Public managers are civil servants who might -for political or other personal reasons and agendas - pay lip service while preparing for the next election (Sanger, 2012). Finally, their research showed that the economic crisis in the U.S. in 2009 led to budget-cuts in the public sector, which was translated into service-cuts, wage-cuts, recruitment freezes, lay-offs and major staff reduction in most public institutions; increased pressures at work and reduced efforts regarding PM by public officials; as well as reduced or no investments in PM systems in order to cover more urgent needs (Sanger, 2012).

Fryer et al., (2009) conducted a literature review and identified three broad categories of PM pitfalls in public institutions: *technical pitfalls* (i.e., merely technical aspects related to the choice of indicators and methods of data gathering, of the information systems used, the analysis and validation systems incorporated, etc); *system pitfalls* (i.e., problems related to aligning PM systems with the "bigger picture" and with pursuing the long-term, important goals that create value for citizens); and *involvement pitfalls* (i.e., problems that arise from the involvement of various stakeholders, politicians, public officials and others in the PM implementation). As far as this last category is concerned, Diefenbach (2009, p.905) quoted that *"NPM's impact on employees and corporate culture of public sector organisations comprises a whole range of negative psycho-sociological and organisational effects such as: increase in occupational stress, illness, low morale, decline in job satisfaction and motivation, alienation, fear, resentment, the distorting intellectual effects of writing for audit, a competitive, adversarial and punitive ethos, as well as wasteful, stressful, over- bureaucratic, and expensive audit procedures, increased tensions, more distrust between people, forms of symbolic violence and institutional bullying, a rougher working climate, an invisible net of managerial power and domination".* Seemingly, Murphy (2018) identified four main pitfalls of PM: the distribution of performance; the persistent weaknesses in establishing reliable and valid performance measures; the low usefulness of performance feedback to employees; and the low usefulness of performance measurements to organisations. He proposes that organisations should give up on routine assessment of results and turn to "softer" leadership and coaching approaches.

Franco-Santos and Otley (2018) have conducted probably the most inclusive work until today in reviewing and theorizing the pitfalls of PM systems, their causes and their effects on individuals and organizations. They concluded that the most significant unintended consequences of PM include gaming, data manipulation, selective focus, illusion of control and relationships change. They argue that these consequences are a side-effect of some restricting factors of the public sector, such as indifference, mistakes, short-term priorities, core values, self-fulfilling prophecies and shifts in social relations (Franco-Santos & Otley, 2018).

Figure 7. Conceptual framework of the unintended consequences of Performance Management Systems. Source: Franco-Santos & Otley (2018, p. 60).



Bevan and Hood (2006) in their study identified many of the negative consequences documented above, presenting evidence from the public healthcare sector in England. According to their findings, English public health service authorities and officials that are gathering performance data do not use them in practice for performance improvement purposes. They found that, paradoxically, all those measurements are completely detached from the real decision-making; that selective reporting is a persistent temptation for public healthcare organisations managers; and that fear of exposure of mistakes committed and of the criticism or the legal consequences that might follow creates incentives for gaming, manipulating or distortion of the information and the data gathered. Seemingly, Chang (2006) mentions the case of waiting lists for surgery in public hospitals, which the government tried to reduce by starting measuring the average time in the list and linking hospital managers' performance on those measurements. The managers indeed managed to improve the waiting times but this improvement was made on the cost of the real patients' needs, by giving priority to simple surgeries and making the patients with significant surgeries, such as hip replacements, wait longer than before.

Other paradigms of *deviant behaviour* (Fryer et al., 2009) in the public healthcare sector reported by PM scholars (Chang, 2007; Bevan & Hood, 2006; Fryer et al., 2009) include: (1) Manipulation of goal-setting, by establishing too easy goals and working just to reach those goals, ignoring other, potentially more important factors; (2) Manipulation of the data gathered (if the real performance is lower than the target set) or intentionally under-performing (if the real performance is higher than the target set) in order to perform around the benchmark and not much higher or much lower; (3) Emphasis on reaching goals at the cost of other (unmeasured) factors that would might create real value for patients; (4) Manipulation of the selection of measures and performance metrics by public managers, so as to affect the measurements to their advantage (Bevan and Hood, 2006; Chang, 2007; Fryer et al., 2009). Examples of such behaviours include: emergency calls being downgraded in order to

circumvent time limits; cancelation of follow-up appointments to make sure that the waiting time for all first-time appointments is within the performance targets; accident and traumatised patients not entering the ER but waiting in the ambulances, so that the waiting time in the ER does not exceed the targeted one; surgeons not accepting any more patients towards the end of the financial year, in order not to augment costs; trolleys in corridors being considered as beds, so as to present higher numbers of admitted patients; and public doctors with long waiting lists starting to eliminate patients from the list by seeing them privately, gaining out-of-pocket money from those patients for doing what should be done in a public care setting without an extra charge for the patients (Bevan & Hood, 2006; Chang, 2007; Fryer et al., 2009; Ranade, 1994).

Arnaboldi et al. (2015) have documented significant failures of existing practices in NHS in England, when hospital managers get so over-concerned around performance measurements and targets accomplishment that they lose sight of the more important concerns of the hospital's purpose and efficiency. Noto et al. (2020) analysed data of a regional health authority in Italy and found that although Italian regional health services have succeeded to minimize workforce expenses – achieving the performance target set – management of their overall expense was not completely addressed. Overall, the initiative adopted by the central government had the consequence of restricting the decision-making power of the regional authorities, motivating them to transfer funds from manpower to the procurement of extra services (Noto et al., 2020). Seemingly, Franco-Santos and Otley (2018) mention the example of a UK hospital trust where *"the overreliance of senior staff on the hospital's PM System led to an organizational culture focused on doing the system's business (i.e., hitting performance targets) resulting in patient neglect and high mortality rates. Paradoxically, a system aimed at facilitating the delivery of high-quality patient care and healthy lives ended up creating the opposite results".* They raise awareness that this case is not an unusual one, and that similar negative effects are reported in the PM literature and practice (Franco-Santos & Otley, 2018).

Figure 8. Types of deviant behaviour and their causes. Source: Fryer, Antony & Ogden (2009, p. 486).

Factors	Resultant types of behaviour
A divergence between the organisational objectives and the measurement scheme	Tunnel vision: choosing to concentrate on the easiest indicators and ignoring the harder ones Sub-optimisation of individual departments or units to the detriment of the total system Myopia: focusing on short term targets at the expense of the longer term objectives
An inability to measure complex organisations accurately	Measure fixation: focusing on the indicator rather than the desired outcome Misrepresentation: either misreporting or distorting the data to create a good impression
An inability to process performance data correctly	Misinterpretation as indicators are frequently imprecise statistical measures which means when they are collated in a league table there is actually no difference between them, although this might not be apparent from the single-point estimates used Gaming: deliberately under achieving in order to obtain a lower target next time
An inability to respond to changing circumstances	Ossification, so that when an indicator is no longer relevant it is not revised or removed

For most public institutions, such as public hospitals, the most vital resource is their human resources; their skills, experience and expertise, their managerial capacity for problem-solving and policy implementation (Arnaboldi et al., 2015). In health and social services NPM reforms have resulted in increased workload with fewer and demotivated staff, increasing levels of stress and fatigue, high absenteeism and labour turnover, while the bureaucracy of the audit society - in which boxes must be ticked to demonstrate compliance with targets - is continuing to grow (Arnaboldi et al., 2015; Funnell, 2015; Kaupa et al., 2020). Thus, according to Arnaboldi et al. (2015) *"the single largest pitfall for performance management systems in public service organisations is a negative side-effect which undermines the motivation, morale and behaviour of human resources".*

The high rate of failure and unintended consequences of PM systems in the private sector led in 2015 many major companies such as Deloitte, Microsoft and Google to change their PM Systems, with some of them (e.g., Accenture) deciding to even hold off on their annual performance report (Lee, 2019). This step away from conventional PM systems has intensified the social discourse as well as the debate in academia and mass media over the collapse of PM. However, PM is still present in the private as well as in the public sector, and it will continue to be present. Emergency occasions, such as the recent fiscal crisis of 2008-2009 and the latest COVID-19 outbreak, emphasize that PM systems have a role to play in hospitals, but they should be designed in a way that they promote sustainability and resilience (Noto et al., 2020; Vainieri, Noto, et al., 2020). Thus, instead of looking at PM systems as "collapsing" it might be better to look at PM systems as "evolving" (Lee, 2019).

2.4 Research Gap

Our literature review showed that although there has now been more than 40 years of experience with PM in the public sector, major challenges are still present and the expected enhancement in performance, accountability, transparency, service quality and value for money have not yet been fully realized (Fryer et al., 2009; Noto et al., 2020). There are success stories documented in a unit-level or in a departmental-level, but when looking at the organisation as a whole those successes often turn into failures (Fryer et al., 2009).

Seemingly, despite the worldwide establishment of the notion that PM in healthcare leads to improved services, it is still debatable among researchers whether PM systems in healthcare measure what really matters and whether they ultimately serve their underlying purpose, which in public hospitals should not be other than improving quality of care for patients (De Vos et al., 2009; Nolan & Berwick, 2006; Vainieri, Ferrè, et al., 2019; Vainieri, Noto, et al., 2020; Werner et al., 2008a, 2008b). A growing part of literature states that - despite their compliance with well-established processes of care - traditional performance management policies might not affect or even deteriorate hospital performance and quality of healthcare services (De Vos et al., 2009; Nolan & Berwick, 2006; Werner & Bradlow, 2006; Werner et al., 2008a, 2008b; Wright & Hershman, 2014). A great part of this stream of research focused on the correlation between performance measurements and the actual clinical outcomes, by retrospectively comparing prior measurement scores with the actual clinical outputs and outcomes that were achieved later on. Werner and Bradlow (2006), for example, conducted an extensive study on 3657 hospitals and found that outcome measures in hospitals do not significantly predict mortality rates. Similar studies

on chronic disease management (Nolan & Berwick, 2006) and cancer care (Wright & Hershman, 2014) have come to the same conclusion that *outcome* measures are not conclusively related to clinical outcomes. Seemingly, research that has focused on *process* measures (e.g. comparing infection-prevention measures and postoperative infection rates) has obtained results that cannot conclusively prove whether there is some effect of process measures on clinical outputs or not. All those findings clearly reveal that the previously supposed positive effect of traditional PM in hospitals on the hospital overall performance and enhanced quality of care is not any more given.

A special concern started to be raised by many researchers and leading scholars in the public PM field (Bouckaert & Halligan, 2007; Bovaird, 2005; Bovaird & Löffler, 2003, 2009; Fryer et al., 2009; Jarrar & Schiuma, 2007; Verbeeten, 2008) regarding the trade-off between short-term and long-term goals that is apparent in all public organisations, but has even more detrimental, life threatening consequences in the public healthcare institutions (Verbeeten, 2008). Jarrar and Schiuma (2007, p.5) quote that "*managers have become more focussed on obtaining immediate results, to the detriment of the long-term vision and ethos of the public sector. In many respects, this change in the management style and system represents a shift in values from equity, security and resilience – features of the public sector – to efficiency and individualism*".

Recent research on performance management has shown that ineffective measurement systems are not just useless but potentially dangerous, as they can substantially harm the organisation in many ways (Bianchi, 2010, 2012, 2015; De Gooyert et al., 2019). Such ways are for example shifting the focus on unimportant elements at the cost of neglecting the important ones and driving people to manipulate resources in order to achieve intended results in the short-term, whereas creating catastrophic consequences in the long-term (Forrester, 1958; Senge, 1990). Such trade-offs and common "pitfalls" of traditional measurement systems create a major gap between the desired, favourable outcomes and the documented, unfavourable ones (Bianchi, 2012, 2013, 2014, 2016; Bivona, 2015; De Gooyert et al., 2019; Forrester, 1958, 1961; Sterman, 1989, 2000). Furthermore, a wide range of negative consequences and "pitfalls" arising from the implementation of PM techniques have been identified in the public healthcare sector, one of the most significant ones being the sub-optimization problem, i.e., concentrating on enhancing one aspect of healthcare without taking into consideration the impact on other components of the healthcare system or organisation (Vainieri, Noto, et al., 2020). This problem is particularly relevant for public hospitals because of the multifaceted and complex structure of hospital services, and because outputs and outcomes of hospitals are always a product of continuous and strict collaboration between different units, departments and professionals (Noto et al., 2020; Vainieri, Noto, et al., 2020).

All those findings tell us that traditional PM systems have often failed to enhance the performance of public healthcare institutions but they tell us little about the causes of this failure, which essentially creates a research gap worth investigating. Thus, the central question that this research study will try to address is *Why do traditional PM Systems in healthcare not always lead to improved performance?*

Previous research on those negative outcomes mainly focused on statistical analysis and on the correlation between different factors of performance, hypothesising that there is a linear effect between performance of public healthcare services and some factors of the internal or the external environment. A variety of potential causes of

this effect have been proposed by different scholars, but all those findings remain scattered. Such causes include, for example, inconsistency between the culture of public organisations and the PM method itself; decrease of integrity and morale of the employees; and negative feedback loops (Fryer et al., 2009). Meyer and Rowan, for example, wrote in 1977 that evaluation and audit are official claims of social control that violate the presumption that public workers are behaving competently and in good faith, and that violation of this presumption fundamentally decreases integrity and trust (Meyer & Rowan, 1977). Seemingly, Adcroft and Willis (2005) suggested that performance assessment undermines the integrity of public sector workers and transforms services into artifacts that run contrary to all reasoning around efficiency, resulting in low performance.

More recently, researchers have started to see those negative outcomes as "system pitfalls", occurring from the non-linear interconnection and the dynamic interaction of the different elements and factors that comprise the health system and the healthcare institutions, i.e., their structure, the policies implemented, the behaviour and the decisions of people - healthcare workers and patients - inside this system. For example, using a systems approach to PM, Boland and Fowler (2000) demonstrated that performance measurement can create feedback loops that result in a spiralling decrease in performance. Seemingly, Al-Habib (2020) noted that cost cutting without taking into account the unintended effects may be dangerous and self-destructive, contributing to "spurious savings" and constrained treatment capacity with reduced accessibility. He concluded that future research should focus on shedding light to the "black box" of the healthcare process and the value-creation within this process, with a special attention on the outcome variables. Instead of the item-by-item and composite measurement approach that was traditionally used to measure clinical outcomes, Nolan & Berwick (2006) proposed an *all-or-none assessment* of healthcare for process measuring, because *"once an organization reaches a high score on the all-or-none measure, much of the variation in the delivery of care will have been removed, and the relationships between outcomes and other causal factors can be studied with much greater precision".*

The implementation of a systemic performance assessment methodology in Healthcare is sponsored by many recent scholarly contributions in the field (Arnaboldi et al., 2015; Costanza et al., 2014; Bivona, 2010, 2015; Bivona & Cosenz, 2017a, 2017b; Bivona & Herrera-Daza, 2008, 2009; Bivona & Noto, 2020; Davahli et al., 2020; Franco-Santos & Otley, 2018; Fryer et al., 2009; Helal, 2016; Renmans et al., 2017; Mwita, 2000; Noto et al., 2020; Vainieri, Ferrè, et al., 2019; Vainieri, Noto, et al., 2020; Wang et al., 2020). Adopting a systemic perspective means taking as a unit of analysis the organisation as a whole, and not one unit or department; acknowledging its internal and external environment and culture in which health care is performed; and considering the interconnected and the concurrent existence of the pitfalls documented as inherent to the structure of the system and the policies implemented. Vainieri, Noto, et al. (2020) propose that a holistic and more comprehensive approach to PM is required in order to *"overcome a static representation of health systems both in terms of the components—i.e., to avoid that performance is conceived as the performance of a professional or a unit for a specific patient—and time—i.e., to prevent myopia in the delivery of healthcare services only on short-term impacts"*. Seemingly, Arnaboldi et al. (2015) argue that PM in the public sector is far more complex than in other sectors (i.e., non-profit or private sector) thus the presumption within the existing literature that *"the effective public manager exists and will deliver"* is probably illusive. As Arnaboldi et al. (2015) suggest, *"the underlying*

dimension which makes performance management so difficult is the sheer complexity of - and the often over - simplistic approach to performance management in the public sector". Arnaboldi et al. (2015) argue that for PM to be successful, especially in the healthcare sector, the adverse effects on human resource must first be managed, but they propose that this target should better be confronted through nuanced, empirical research with a systemic perspective (Arnaboldi et al., 2015). They also mention that *"much of the existent literature on performance management tools and technologies seems to be based on specific applications of particular practices. There is much to be gained from closely grained case studies of practice. But it would be interesting to see studies which undertook a more holistic evaluation of performance management by paying attention to the details and instability of systems"* (Arnaboldi et al., 2015).

This research study will follow this suggestion and will attempt to address the above-mentioned research question by conducting empirical research using a case-study and adopting a systemic perspective. More specifically, it will try to answer why do traditional PM Systems in healthcare not always lead to improved performance by outlining the unintended consequences of the Greek Healthcare Reform in a public hospital through the DPM approach.

As hospital performance is a quite broad and rather vague concept, for which existing definitions differ widely according to different stakeholder groups, hospital performance should be defined in a broader sense and analysed as a component of the healthcare system (De Gooyert et al., 2019; Meadows, 2008; Sterman, 1994). Thus, we need an approach that can give us the systemic view of the public hospital and the factors that affect its performance, as well as the perceptions of the various stakeholders in the hospital (healthcare workers, patients, politicians, managers, policy-makers). This leads us to the first research question: (1) *How do stakeholders define hospital performance?*

Furthermore, there are many reasons why decisions in public hospitals are not implemented, such as resistance to change; not taking into account the political, cultural or institutional context; limited involvement of stakeholders in the decision-making process; short-sighted decisions and trade-offs between short and long term goals; lack of resources; political agendas; gaming and power differences; lack of follow-up measures. It is also true that the public health sector is characterised by multiple decision-making centres, overregulation, extensive political party's penetration in public management as well as irrational influences by labour unions (Economou, 2010; Minogiannis, 2012; Theodorakioglou & Tsiotra, 2000), which are only some of the factors that comprise a complex, non-linear, multi-loop feedback system of the public hospital function. Such a system makes it hard to frame and analyse its long-term dynamic outcomes by traditional "static" approaches of performance management (Cosenz & Noto, 2016; Linard, et al., 2002). This leads us to the next two research questions: (2) *What are the main feedback loops driving hospital performance, as perceived by stakeholders?* and (3) *How can those feedback loops explain the documented negative outcomes of the Greek healthcare reform?*

Moreover, it is now considered essential to plan PM reforms thinking of the organisation as a whole, in order to anticipate disruptive behaviours and take into consideration traditional obstacles such as resistance to change in public healthcare institutions, using *outcome-based* interventions that promote the implementation of more versatile and far-reaching governmental structures to address complex problems (Bivona, 2015; Bivona &

Cosenz, 2017a, 2017b; Bivona & Herrera-Daza, 2008, 2009; Borgonovi et al., 2018; Vainieri, Ferrè, et al., 2019; Vainieri, Noto, et al., 2020; Wang et al., 2020). As Arnaboldi et al. (2015) note, *"within many public services there are many short-term pressures to deliver. There is scope for the receptivity and feasibility of longer planning horizons in future performance management modelling".* Such dynamics of complex systems could be adequately modelled and analysed using the *Dynamic Performance Management (DPM)* approach (Bianchi, 2010, 2012, 2015, 2016; Bianchi et al., 1998; Bivona, 2015; Bivona & Montemaggiore, 2010; Cosenz & Noto, 2016).

The DPM approach provides a systemic perspective of the mechanisms that lead to enhanced performance in the public healthcare sector, and will enable us detect the causal links between strategic resources, outputs (short-term results) and outcomes (long-term impact on quality of services and value for patients). It will enable us identify the critical success factors leading to better hospital performance. It will reveal the drivers of performance and their effect on outputs and outcomes, and it will show us how those outputs interact with strategic resources, causing the overall performance of health services to increase or to deteriorate (value destruction or value creation). Exploring to what extent and through what mechanisms PM policies of public hospitals affect performance would target the gap identified in the relevant literature, and would create promising opportunities for a theoretical contribution. Concurrently, such a research study would contribute to policy insights regarding changes in the legislative framework for PM in Greek public hospitals that would ultimately lead to improved performance of Greek public hospitals and better quality of healthcare services, essentially creating a practical contribution for policy makers and patients. This leads us to the last two research questions: (4) *What are the main strategic resources impacting hospital performance measures and what are the main performance drivers that are impacting intermediate products and end results?* and (5) *What are the practical implications of the study for policy design in Greek public hospitals?*

As the focus of this research study is to contribute to identifying pitfalls and unintended consequences following the decision to adopt a PM System in healthcare organisations, we reviewed the Greek Healthcare Reform that has been recently implemented in public hospitals to improve performance of the Greek public healthcare sector. Therefore, we investigated the main pillars of the Greek Healthcare Reform and outlined the main unintended consequences reported by scholars. Despite the extensive research identifying the "pitfalls" of the NPM reforms around Europe which we reviewed in this chapter, and the unintended consequences for hospital staff and patients, very little is known about the mechanisms that caused those negative effects. Despite their undoubtable value, those early findings still leave many questions unanswered.

To begin with, there is still no definite answer regarding the supposed positive effects of the PM policies implemented on the hospital performance, and this could be possibly seen as a consequence of the research methods used in the existing studies. As most of the existing research entailed statistical methodology and Bayesian analysis, the only result it could obtain was lack or proof of correlation between two variables, a PM indicator on the one hand and the documented hospital performance on the other. Secondly, the existing literature has shown that the performance measures undertaken during the NPM reforms did not facilitate internal PM in hospitals, but it has revealed very little about the nature of the relationship between PM and hospital performance, or about the mechanisms that lie within this relationship and drive the dynamics between the two. This is again -

at least in part - a methodological pitfall, as a rather static methodology was used to analyse a dynamic, ongoing effect on quality of clinical outputs and outcomes which cannot be easily captured by a simple before-and-after evaluation design.

Studies using a DPM methodology would be necessary in order to address the gap in existing knowledge regarding the causing mechanisms of the negative consequences of the healthcare reforms, which is necessary for policy-makers to design better, more quality-oriented healthcare policies, interventions and reforms in the future. This theory-oriented research project addresses this gap by shedding light on how hospital performance is perceived by stakeholders of a Greek public hospital and what mechanisms drive its trend (dynamic behaviour). Following a systemic approach, the selected case study - which is a real hospital in the Greek Healthcare system - will allow us to investigate and test the above research questions. In doing so, we framed our analysis using the DPM perspective.

2.5 Research Questions

The purpose of this study is to empirically conceptualise a qualitative model of hospital performance as perceived by stakeholders of a Greek public hospital and use the DPM analysis in order to help policymakers in Greece re-design performance management policies and foster hospital performance. Thus, this research attempted to address the following research questions:

1. How do stakeholders define hospital performance?
2. What are the main feedback loops driving hospital performance, as perceived by stakeholders?
3. How can those feedback loops explain the documented negative outcomes of the Greek healthcare reform?
4. What are the main strategic resources impacting hospital performance measures and what are the main performance drivers that are impacting intermediate products and end results?
5. What are the practical implications of the study for policy design in Greek public hospitals?

2.6 Research Aim

The overall aim of this PhD research study is to contribute to the understanding of the performance of healthcare organisations by showing how to empirically conceptualise a comprehensive, context-specific model of hospital performance as perceived by hospital stakeholders, and by using this model to explain the counterintuitive negative outcomes of performance management policies on hospital performance in order to help policymakers design better, quality-oriented performance management policies and reforms.

2.6.1 Internal Objective (Overall Research Contribution)

This theory-oriented research project contributes to the broader field of performance management in the public sector by explaining the possible causes of the negative, counterintuitive outcomes of hospital performance management policies on the hospital performance. More specifically, the present study has the internal objective of extending the existing state-of-the-art of public hospitals management by addressing the gap in knowledge

regarding the possible causing mechanisms of the negative, counterintuitive outcomes of traditional performance management policies on the hospital performance, and it does that by shedding light on how the hospital performance is perceived by hospital stakeholders and on what mechanisms drive its trend (dynamic behaviour).

2.6.2 External Objectives (Scientific/Theoretical Contribution & Practical Implication)

This study has a dual external objective with two main components: a scientific/theoretical contribution and a practical implication. First, this research aims to make a theoretical contribution to the public governance academic discussion, and in particular to the literature around Performance Management in the Public Health Sector, by building a comprehensive *Conceptual Model of Hospital Performance* that encompasses feedback mechanisms related to hospital performance, and use it to explain the dynamic impact of performance management policies in Greece on the hospital performance. This will hopefully open the way for researchers to use this approach in order to assess hospital performance management policies from an outcome-based perspective. Second, this research aims to make a practical contribution for policy-makers of the public healthcare sector in Greece, by helping them redesign the existing performance management policies and by providing them with the tools to create better, more quality-oriented policies, interventions, and healthcare reforms in the future.

2.7 Conclusion

In chapter 2 we reviewed the positive as well as the unintended, negative consequences in adopting Performance Management Systems in the public sector and, especially, in the public healthcare sector. Our findings revealed that traditional PM systems have often failed to enhance the performance of public healthcare institutions and that there is no consensus on the causes of those failures. Notwithstanding their undoubtable value, those findings still leave many questions unanswered. Furthermore, despite the extensive research identifying the "pitfalls" of the NPM reforms around Europe which we reviewed in this chapter, and the unintended consequences for hospital staff and patients, little is known about the mechanisms that caused those negative effects, which essentially creates a research gap worth investigating. Thus, the main research question that this research study tries to address is: *Why do traditional PM Systems in Healthcare not always lead to improved performance?*

More recently, researchers have started to see those negative outcomes as "system pitfalls", occurring from the non-linear interconnection and the dynamic interaction of the different elements and factors that comprise the health system and the healthcare institutions, i.e., their structure, the policies implemented, the behaviour and the decisions of people - healthcare workers and patients - inside this system, etc. The implementation of a systemic performance assessment methodology in healthcare is sponsored by many recent scholarly contributions in the field (Arnaboldi et al., 2015; Costanza et al., 2014; Bivona, 2010, 2015; Bivona & Cosenz, 2017a, 2017b; Bivona & Herrera-Daza, 2009; Bivona & Noto, 2020; Davahli et al., 2020; Franco-Santos & Otley, 2018; Fryer et al., 2009; Helal, 2016; Renmans et al., 2017; Mwita, 2000; Noto et al., 2020; Vainieri, Ferrè, et al., 2019; Vainieri, Noto, et al., 2020; Wang et al., 2020). Adopting a systemic perspective means taking as a unit of analysis the organisation as a whole, and not one unit or department; acknowledging its internal and external environment and

culture, in which health care is performed; and considering the concurrent existence of the pitfalls documented as inherent to the structure of the system and the policies implemented.

Studies using such a methodology would be necessary in order to address the gap in existing knowledge regarding the causing mechanisms of the negative consequences of the healthcare reforms, which is necessary for policy-makers to design better, more quality-oriented healthcare policies, interventions and reforms in the future. This case-based research project addresses this gap by shedding light on how hospital performance is perceived by stakeholders of a Greek public hospital and on what mechanisms drive its trend (dynamic behaviour). Following a systemic approach, the selected case study - which is a real hospital in the Greek healthcare system - will allow us to investigate and test the above research question. In doing so, we framed our analysis using the Dynamic Performance Management methodology. In the following chapters we will explicitly present and describe the research methods used to structure, conduct and analyse our research study.

CHAPTER 3 – INTRODUCTION TO THE RESEARCH METHODOLOGY

In chapter 3 we introduce the research methodology and approach followed. More specifically, we present the philosophical stance of the study, the methodological approach (i.e., the *Dynamic Performance Management* approach) and the research strategy undertaken, and we briefly discuss the five research traditions identified in our study and their key features. Finally, we explain how we combined those traditions to facilitate our research purpose and how we integrated them in our research design, and we outline the most important methodological choices undertaken.

3.1 Philosophical Stance

The philosophical stance of any research study is formed by the ontology (i.e., the nature of reality), the epistemology (i.e., the nature of knowledge), and the methodology (i.e., methodological approach and research methods) that the researcher selects and adopts (Lincoln & Guba, 1985). Those elements define the way that the researcher views and interprets the reality; they define the assumptions and methods that the researcher uses in order to remove the complexity of the real world and try to give meaning to parts of it (Lincoln et al., 2011). Four such philosophical paradigms have been outlined by Creswell (2014): *postpositivism*, *constructivism*, the *transformative paradigm*, and *pragmatism*.

In this study, we adopted a systemic (Meadows, 2008), participatory (Kiraly & Miskolczi, 2019), inductive (Luna-Reyes & Anderson, 2003) and dynamic (Bianchi, 2016) approach by combining the methodologies of *Group Model Building* (Andersen & Richardson, 1997; De Gooyert, 2016, 2018; De Gooyert et al., 2019; Richardson & Andersen, 1995; Vennix, 1996;), and *System Dynamics* Modeling (Forrester, 1961; Richardson & Pugh,1981; Sterman, 1989, 2000) into the *Dynamic Performance Management* Approach (Bianchi, 2016). Other research traditions identified in our study are the *Stakeholders Theory* (Bryson, 2004; De Gooyert et al., 2017; Freeman, 1984; Mitchell et al., 1997) and *Participation* (King & Kraemer, 1993; Király & Miskolczi, 2019; Rouwette, 2016; Schweiger et al., 2018) research traditions. All those approaches stand in the constructivist side of the continuum as research approaches, because they all consider realities as subjective, complex and multi-layered, actively shaped by perceptions and opinions of stakeholders (De Gooyert, 2019; Lane & Schwaninger, 2008). This is well-summarised by the system dynamicist John Sterman (2002) in his famous quote *"all models are wrong"*, meaning that reality is much too complex to be modelled, and that all models are essentially simplifications of reality, even though quite useful to analyse and interpret it.

This exploratory study went back to the roots of hospital performance and used the DPM approach based on stakeholders' beliefs, experiences and perceptions of reality to identify its underlying mechanisms and to investigate whether and how the PM policies adopted in the hospital meet their underlying purpose of leading to better performance and quality of healthcare services for patients. Thus, constructivism is the paradigm that best suits our purposes as constructivism is *"oriented to the production of reconstructed understandings of the social world"*, valuing *"transactional knowledge"* (Denzin & Lincoln, 2011, p. 92).

Despite the growing literature on DPM modeling in public entities, applications of this methodology in the public healthcare sector are limited (Costanza et al., 2014; Bivona, 2010, 2013, 2015; Bivona & Cosenz, 2017a, 2017b; Bivona & Noto, 2020; Helal, 2016). Finally, in the Greek bibliography such attempts are completely nonexistent; all facts which essentially create promising opportunities for a theoretical contribution.

3.2 Main Methodological Approach: Dynamic Performance Management (DPM)

The so-called *Dynamic Performance Management* (DPM) approach (Bianchi, 2016) is a combination between traditional Performance Management in the public sector (Bouckaert & Halligan, 2007; Bouckaert & Peters, 2002; Elg et al., 2013; Karra & Papadopoulos, 2005) and the System Dynamics (SD) methodology. It has already been successfully used to support decision-making processes in organisational, institutional and governmental settings (Bianchi, 2016; Bianchi et al., 2017; Bianchi & Tomaselli, 2015; Borgonovi et al., 2018; Munteanu & Newcomer, 2020; Noto & Noto, 2019), while it also permits engaging stakeholders both from the internal and the external environment of the organisation.

The dynamics of complex systems could be adequately framed and analysed by the DPM approach, which provides a systemic perspective and a powerful set of tools for conceptualising and analysing them. The DPM approach can facilitate a systemic view of the mechanisms that lead to enhanced performance of services in the Greek public hospital, enabling us to detect the causal links between strategic resources, outputs (short-term results) and outcomes (long-term impact on performance factors). Furthermore, in accordance with the research traditions of *Stakeholders Theory* and *Participation*, we believe that stakeholders' perceptions and involvement through the DPM approach are crucial for our research objective of "redefining" hospital performance by involving stakeholders in GMB modelling sessions, on the one hand, and facilitating change on the other hand.

3.3 Research Strategy

In accordance with De Gooyert (2016, 2018), this exploratory study used a case-based (*Grounded Theory Building* Strategy), which uses iteratively existing theory and case qualitative data for model building to make a theoretical contribution in the field of performance management in the public sector, using the *Dynamic Performance Management* approach. More specifically, this theory-oriented research project used a case-study in order to shed light on how hospital performance is perceived by stakeholders in a Greek public hospital and on what mechanisms drive its trend (dynamic behaviour). All those stakeholders' perceptions were captured in a model, and the model was used in order to explain the documented, counterintuitive negative outcomes on the hospital performance which followed the Greek healthcare reform.

We followed a qualitative approach, as the emphasis of our study was on eliciting knowledge stored in the mental models of participants and on knowledge-building (Turner et al., 2014). Through the modelling sessions, this knowledge was elicited and stored in the model of hospital performance, which is a qualitative system dynamics model showing the causal links between different variables related to performance (*Causal Loop Diagram*). Emphasis on causality is another reason why a qualitative approach was selected, as causality cannot

be easily inferred by merely quantitative approaches. A qualitative approach has made it easier to elicit and depict those causal relations between different factors, according to the participants' experience, beliefs and perceptions.

According to Yin (2009), case studies can be used in many different research contexts, but they are more useful in understanding how or why social phenomena occur. As the primary research question that this research study tries to address is *"Why do traditional PM Systems in Healthcare not always lead to improved performance?"*, the use of a case study seems the most appropriate research strategy for the explanatory purposes of our study. Although various other research strategies could be adopted to answer our research questions, the case-study was chosen as it enabled us to investigate, analyse and interpret hospital performance in its genuine context, from the individual viewpoints of the participant hospital stakeholders (Christensen et al., 2010; Creswell, 2014). The case-study strategy also provided us with greater depth in the qualitative data gathered and in the exploration of the performance mechanisms.

3.4 Research Traditions identified in the Study

In this section we will introduce and discuss separately each one of the five main research traditions found in our study, and we will describe their key features. Those research traditions are the following:

1. *Dynamic Performance Management* (Bianchi, 2016)
2. *System Dynamics* (Forrester, 1961; Minyard et al., 2018; Richardson & Pugh, 1981; Sterman, 1989, 2000)
3. *Participation* (Green & Hunton-Clarke, 2003; King & Kraemer, 1993; Király & Miskolczi, 2019; Schweiger et al., 2018)
4. *Group Model Building* (De Gooyert, 2016, 2018; De Gooyert et al., 2019; Richardson & Andersen, 1995; Rouwette, 2016; Vennix, 1996)
5. *Stakeholders Theory* (Bryson, 2004; De Gooyert et al., 2017; Freeman, 1984; Mitchell et al., 1997)

Dynamic Performance Management

Dynamic Performance Management (DPM) is a non-conventional conceptual and methodological framework used to assist public managers and policy-makers design successful interventions for the sustainable enhancement of overall performance of public institutions and the provision of quality-services to citizens (Bianchi, 2016). As a method, DPM allows corporate decision-makers to establish causal processes that influence organizational outcomes over time, and it entails a selective and sequential form of examination. It draws its own principles from the research that has proven the lack of effectiveness of traditional, budgetary-control based PM systems, as these systems are no longer capable of delivering knowledge that can support: managing dynamic uncertainty, assessing intangibles, identifying delays, interpreting short-and long-term linkages, and establishing sound system boundaries and scope in strategic planning (Bianchi, 2016, pp. 71-72).

Traditional approaches to PM rely on user experience questionnaires for PM improvement, which might be helpful in showing possible areas for improvement, but is certainly not enough to determine what actions should be taken exactly; how they should be implemented; and who should be involved. Such interventions typically concentrate only on the performance of the front-line operations of the public organisation, who work in the last

segment of a much longer service distribution structure: the “value chain” of the public institution (Bianchi, 2016, pp. 174-175). Assuming that enhancement of user satisfaction could only be the product of the attempts rendered by the front-line level units and employees may be deceptive. In reality, those entities are, in effect, 'clients' of other departments and units operating at higher levels of authority. Thus, traditional PM interventions are usually narrow-sighted and partially successful, as they have some positive impact only in the short-term and might give rise to a sense of discontent and loss of enthusiasm of the employees of the front-line units (Bianchi, 2016, pp. 174-175). For all those reasons, the data gathered from questionnaires provide just a limited contribution to decision-makers in respect to the development of sustainable customer satisfaction initiatives and projects. Planning of successful PM initiatives and reforms should consider in the first place: (1) the process of services provision and the exact points where to intervene in this process; (2) what is the framework for the allocation of tasks, responsibilities and expertise affecting the process of public services production; and (3) who should be liable for the successful implementation of the intervention and the achievement of sustainable outcomes explicitly and implicitly related to the services provided (Bianchi, 2016, pp. 174-175).

In order to deal with those issues, policy-makers and public managers should wear “proper lenses” to view the low user satisfaction reported; to interpret the negative consequences arising from the PM systems and policies implemented; to explain the feedback structure underlying low performance; and to define alternative strategies to change the PM structure and policies. To this end, DPM has been used to promote an interpretation of: (1) how end-results are influenced by performance drivers; (2) how those performance drivers can be influenced by policy levers to control strategic resource accumulation and depletion mechanisms, and (3) how the strategic resources, in turn, affect end-results, including not only the outputs of hospital services but - priorly and most importantly - their long-term outcomes, such as the patient satisfaction and patients’ health and well-being.

Figure 9. The DPM *Instrumental View* of Performance. Source: Bianchi (2016, p. 73).

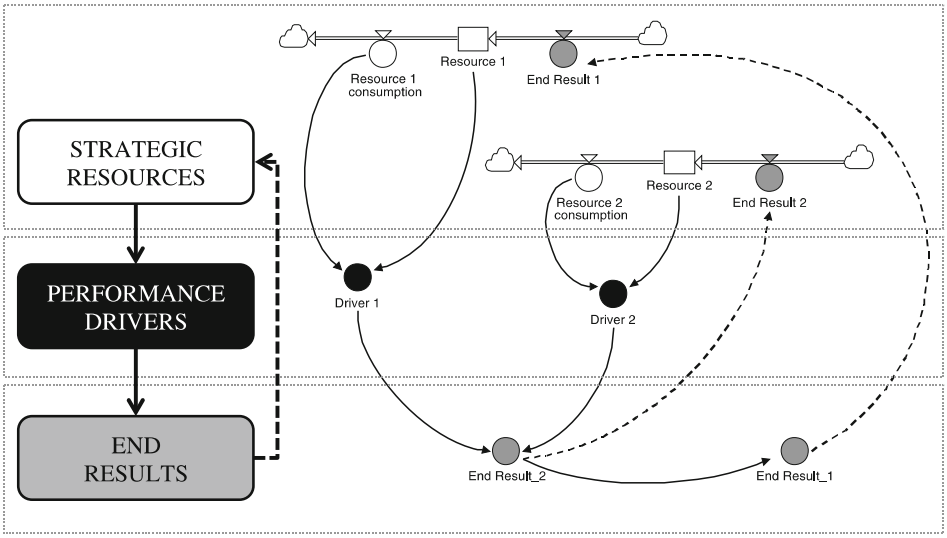


Figure 10. The DPM *Objective View* of Performance. Source: Bianchi (2016, p. 121)

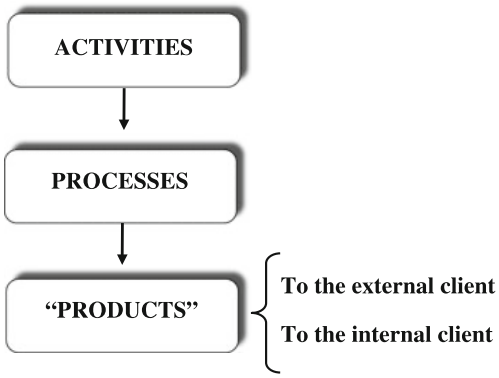
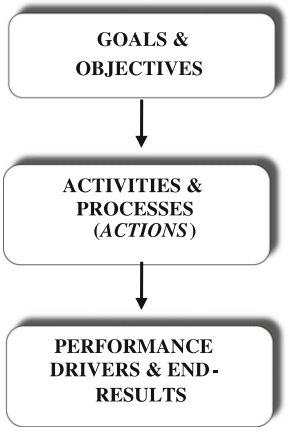


Figure 11. The DPM *Subjective View* of Performance. Source: Bianchi (2016, p. 136)



According to Bianchi (2016, p.81) "*resource measures should not be confused with performance measures. There is a means versus ends relationship between the two"*. In accordance with the DPM framework, the analysis of performance emphasises both end-results and performance drivers (Bianchi, 2016, p.81). Finally, there are three complementary, interconnected views in designing a DPM system for the sustainable enhancement of a public organisation, namely: the DPM *instrumental view*; the DPM *objective view*; and the DPM *subjective view* (Bianchi, 2016, pp. 71-72).

System Dynamics

System Dynamics (Forrester, 1961; Minyard et al., 2018; Richardson & Pugh, 1981; Sterman, 1989, 2000) is a computer-aided, scientific methodology for policy analysis and design, developed initially during the 1950s by Jay Wright Forrester. *System Dynamics (SD)* methodology is suitable for understanding and analysing complex, dynamic problems, such as the ones encountered in social, corporate, industrial and economic systems, which are characterized by interdependence, feedback, circular causality and delays (Forrester, 1958, 1961; Richardson,

1991).

The purposes of SD studies vary between building theoretical understanding to implementing policies for improvement, and often include both. Important elements in SD research studies include: empirical data to formulate the model and build confidence in the conclusions; the scope of research that captures important feedback; representation of the system structure, delays and nonlinearities; and the usage of behavioural decision rules (Richardson, 1991; Sterman, 1989, 2000).

The SD methodology provides a systemic perspective and a powerful set of tools for conceptualising and analysing complex systems for management and change (Forrester, 1958, 1961; Richardson & Pugh, 1981; Sterman, 1989, 2000), which is relevant especially for healthcare interventions. In their article *Community and programmatic factors influencing effective use of system dynamic models*, Minyard et al. (2018) discuss why there is a great need for validated SD models especially in healthcare. According to the authors, "*SD simulation models can help local partnerships build stronger collaboration, create shared vision, identify high leverage strategies, and explore collaborative investment opportunities".* SD is in fact a powerful tool to create shared understanding and meaning on the problem or on the system that needs to be changed, between stakeholders inside and outside traditional healthcare; between the private and the public sector; and between health professionals with different backgrounds.

Especially in healthcare reforms, SD modelling can have a crucial role in simulating and testing the proposed policies and interventions before implementing them, which is much more effective and efficient, less expensive and less time-consuming than directly implementing a policy and waiting to see the results. Such kind of "direct experimentation" is also quite risky, not only in terms of money and time but - especially for healthcare interventions - in terms of deteriorating population's health as well. In this regard, Minyard et al. (2018) state that in order *"to meaningfully improve population health, communities must take a broader perspective and address the full scope of factors that drive wellness, including those outside of traditional health care".*

Participation

Participation (Green & Hunton-Clarke, 2003; King & Kraemer, 1993; Király & Miskolczi, 2019; Schweiger et al., 2018) refers to the need of involving stakeholders in a process. SD has been a participatory approach since its birth, as Forrester has always involved stakeholders in his modelling efforts. Most SD researchers today agree that *SD "might best be wedded to sociological theories that transcend the structure/agency divide and instead take a dialectical view of them"* (Lane, 1992). However, there are many forms that participation can take, and many participatory techniques and tools are developed for researchers to pick from. Thus, the question becomes which of those techniques are most appropriate for certain cases, and upon what criteria one should choose. We based our choice on the framework of Király & Miskolczi (2019), where three different practices of participation identified in the literature, which are widely used by SD modellers, are compared: *Group Model Building*, *Participatory System Dynamics Modelling*, and *Community-based System Dynamics*. *Group Model Building* was finally chosen as the most appropriate for our research purposes, and was used for the data collection and modelling process. The extensive analysis that we conducted in order to choose between those

techniques, and the reasons that made us choose GMB are presented in chapter 3.5.4.

Group Model Building

Group Model Building (De Gooyert, 2016, 2018; De Gooyert et al., 2019; Richardson & Andersen, 1995; Rouwette, 2016; Vennix, 1996;) is a methodology usually employed in SD studies that need stakeholder's involvement. *Group Model Building (GMB)* is basically a widely recognised and well tested method for using stakeholders in the modelling process. System Dynamics methodology and its building blocks (i.e., instantaneous and accumulating causal relationships; feedback loops; non-linearities) is a fundamental component of GMB. However, an evenly important element is the participation per se, as in GMB studies the model becomes the means, not the end.

GMB is a combination of system dynamics and facilitated participation. As previously remarked, system dynamics is used to tackle complex problems using both qualitative and quantitative modelling principles (Morecroft & Sterman, 1994). It is used to conceptualize the underlying feedback loop structure of the system at hand, in order to discover the potential repercussions of decisions over time (Sterman, 2000). The participation part of GMB is focused on information elicitation, exploring causes of action and evaluating policies between stakeholders. The modellers of GMB rely on quantitative data, written records and information contained within the mental models of the participant stakeholders, which represents the way someone perceives the reality (Huz et al., 1997). The main purposes of using GMB is to clarify the problem at hand by providing a systemic view; to foster understanding and consensus among participants through the alignment of participants' mental models; and to create commitment to the results of the project.

According to the founders of the GMB method (Richardson & Andersen, 1995; Vennix, 1996) the first two steps of SD modelling (i.e., problem identification and problem conceptualisation) have as a final product the *Causal Loop Diagram* (CLD): a qualitative SD model used for insight and discussion by GMB participants to enrich their view and understanding of the "whole" of the problem at hand. Vennix (1996) believes that the involvement of the problem owners (i.e., clients, stakeholders, etc) in the model building is essential for the model implementation and dissemination; thus, the design and delivery of a model made by the modeller alone would essentially false its purpose. This is why GMB is considered essential for our research purposes, despite the fact that involving a group of people with no knowledge of SD makes the whole research procedure more difficult and time consuming for the PhD researcher.

Another important element of the GMB method is the nature of the problem, as it deals exclusively with "messy" or "wicked" problems. Wicked problems in everyday life, in general, and in organisations and institutions, in particular, are problems which are rather difficult to conceive and to solve; have no clear or straight answer and usually have their roots in human brain function (i.e., selective perception and memory, self-fulfilling prophecy, etc). Thus, in order to have a better view of such problems it is crucial to create a shared vision of the problem which encompasses all different views of the various stakeholders through the GMB approach (Richardson & Andersen, 1995; Vennix, 1996; De Gooyert, 2016, 2018; De Gooyert et al., 2019). The extensive

analysis that we conducted and the reasons that made us choose GMB for our modeling effort are presented in chapter 3.5.4.

Stakeholders Theory

In order to identify the stakeholder groups that would best fit our research purposes, we drew from the literature of *Stakeholders Theory* (Bryson, 2004; De Gooyert et al., 2017; Freeman, 1984; Mitchell et al., 1997) which was first introduced by Freeman (1984) in his famous book *Strategic Management: A Stakeholder Approach. Stakeholders Theory (ST)* is not a single theory but rather a big research tradition in management studies, which in general allows for acknowledging stakeholders in the decision making, managerial restructuring and other strategic processes. Freeman (1984) defines stakeholders as *any group or individual who can affect or is affected by the organisation's objectives'* (Freeman, 1984, pp. 46). In the public sector, definitions of stakeholders that are given by researchers vary from *"people or small groups with the power to respond to, negotiate with, and change the strategic future of the organization'* to *'those individuals or groups who depend on the organization to fulfil their own goals and on whom, in turn, the organization depends'* (Bryson, 2004).

What is already obvious from those definitions is that on the one side of the continuum we have people or groups who depend on the organisation, whereas on the other side of the continuum we find people or groups upon whom the organisation depends. This dichotomy is prevalent even in Freeman's definition who talks about people *who can affect* on the one side and people who are *affected by* the achievements of the organisation. This dichotomy in stakeholders' definition - which has in fact various implications for researchers' and managers' decisions when involving stakeholders - is nowadays recognised in the ST literature as the *narrow* vs the *broad* view of stakeholders (Mitchell et al., 1997). In the *narrow* end of the continuum, stakeholders include only the ones that heavily affect the organisation; the shareholders. In the *broad* end of the continuum, stakeholders include even the ones that are slightly affected by the actions of the organisation, and have no power over it.

The concept of power seems to be central in the literature around identification of stakeholders to be involved, thus we analysed it a bit further. Morality, obedience, power of discourse, circular and "soft" power and ethics are only some of the modern advances of the Weberian and - later on - the Foucauldian ideas of power, that comprised the basis for the current concepts and definitions of power (Hardy & Clegg, 2006). According to the Weberian definition, power is embedded in organisational structure and *represents a capacity embodied in a person who retains discretion over the application of that capacity* (Hardy & Clegg, 2006, p.755), whereas for Foucault *power comes with knowledge* (Hardy & Clegg, 2006). Power, with all its inherent contradictions in definitions, remains relevant for organisational studies because concepts which are inherent to power - such as control, efficient and effective solutions to problems, conflicts and resistance - are widely investigated by scholars, as well as because social status and identity nowadays both affects and is affected by power in organisations (Hardy & Clegg, 1996). In this view, the power of quality managers of public hospitals, for example, can be approached from two different perspectives. On the one hand, those managers all have power over their departments and are legitimised to make day-to-day decisions regarding performance issues throughout the hospital, in other departments as well. This can be linked to the power definitions both by Weber and Foucault, as

quality managers have both the knowledge (Foucaultian definition) and the capacity (Weberian definition) to implement changes, and they have the expertise to identify where changes are needed. So, shall we include only quality managers as participants for our interviews and GMB sessions? This question, along with other questions related to how we chose our participant stakeholders will be addressed in the extensive Stakeholder Analysis we conducted, presented in chapter 3.5.4.

3.5 Methodological Choices Undertaken

3.5.1 Choosing between Theoretical and Applied Modeling

According to De Gooyert and Größler (2018) there are many differences between applied and theoretical SD modelling. Those differences have several implications for the research design, and more specifically for the modeling steps that should be followed; for the data collected; and for the model boundary. If we take applied SD as one extreme of a continuum, and theoretical SD as the other extreme, then for applied SD the researcher should follow all the steps of the SD textbooks, collect empirical data on a specific case, and expand the system boundaries; whereas for theoretical SD the researcher does not need to follow all the steps of textbooks, may not always collect empirical data, and can have less broad system boundaries. According to the authors *"it all depends on the purpose of the project and the usefulness of SD to achieve that purpose. Applied and theoretical studies have different purposes, either solving a client's problem or contributing to understanding a phenomenon"*. However, they acknowledge that - most of the time - research studies stand somewhere in between of those two extremes, and have both elements of fundamental or theoretical and of applied research.

Our study, indeed, stands somewhere in between of those two extremes, and has both elements of theoretical and applied research, as it seeks to make a theoretical contribution on what is hospital performance and what dynamic mechanisms it is composed of, but at the same time it seeks to provide decision makers with tangible recommendations on specific changes that could foster hospital performance in Greek public hospitals. However, we find that this research is closer to the theoretical SD extreme, as the theoretical contribution it seeks to make on what is hospital performance is universal, whereas the practical contribution is much more context-specific and focused on the Greek paradigm.

Figure 12. Fundamental vs Applied Research. Adapted from Saunders et al. (2012, p. 12).

	Fundamental research	Applied research
Purpose	• Expand knowledge of phenomena • Results in universal principles relating to the process and its relationship to outcomes • Findings of significance and value to society/organizations in general	• Improve understanding of a particular problem • Results in solution to problem • New knowledge limited to problem • Findings of practical relevance and value to problem owner(s)
Context	• Undertaken by people based in universities and other research institutes • Choice of topic and objectives determined by the researcher • Flexible timescales	• Undertaken by people based in a variety of settings including organizations and universities • Objectives negotiated with originator • Tight timescales

3.5.2 Modeling for a Theoretical Contribution

De Gooyert (2016) identified five different purposes of using system dynamics for theoretical contributions. Building on the work of Harrison et al. (2007), De Gooyert (2016) adds to their list two more purposes, exploration and synthesis, which he identifies as relevant specifically for studies that use system dynamics for theoretical contributions, along with discovery, explanation and critique. Furthermore, in his systematic review De Gooyert (2016) classified the articles studied in three different ways: (1) quantitative (including numerical simulation runs) or qualitative (causal loop diagrams or stock and flow diagrams without simulation runs); (2) inductive (theory-creating), deductive (theory-testing), or both; (3) according to the use or purpose of SD for theoretical contribution (exploration, synthesis, discovery, explanation, and critique).

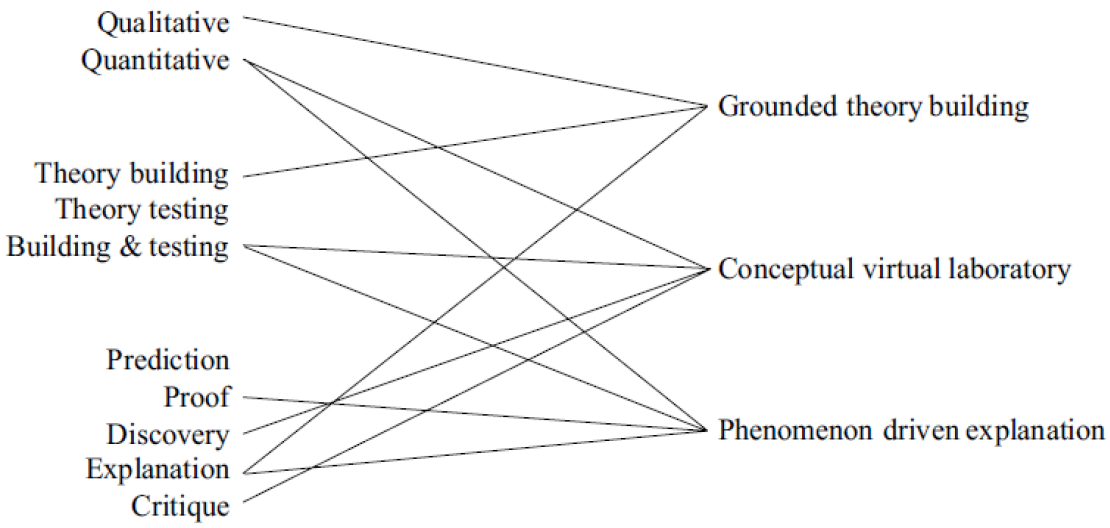
In a later published article, De Gooyert (2019) shows how the various choices and methodological decisions that SD modellers make *"combine into three distinctive, internally consistent system dynamics based research strategies for theoretical contributions"*, namely:

1. *Grounded theory building:* starting from large amounts of qualitative data and iterating between theory and case data, lead to the development of qualitative models (causal loop and/or stock and flow), and thereby to new theory;
2. *Conceptual virtual laboratory:* starting from existing theories and formalizing them to derive new insights. No empirical data are used. The focus is on quantitative modeling and scenario runs/sensitivity analyses;
3. *Phenomenon driven explanation:* starting from empirical data, a quantitative simulation model is developed to replicate a *Reference Mode*[5] of behaviour. In addition, what-if scenarios are run to develop new insights that go beyond the empirical data from which the study started.
4. *Management flight simulator*: an SD model is used to test a hypothesis which is developed from an already existing theory. Statistical analyses are usually used to test these hypotheses, thus SD is only indirectly used here for *proof* or *prescription* (Harrison et al, 2007) rather than for building theory.

Our research study seems to fall into the third category (i.e., *Phenomenon driven explanation*), as indeed we will start from empirical data to build a qualitative (CLD) model of hospital performance. However, our focus is mostly on setting the basis for creating a universal, context-free CLD of hospital performance in Greece, rather than a context-specific CLD for the hospital in which we conducted the case-study. Subsequently, we find that our research study as a whole rather falls on the first category (*Grounded theory building*). In fact, each of our research questions is identified to fall in a different category, as shown on the table that follows, but most of them (three out of five) fall into that first category of *Grounded theory building* (De Gooyert, 2019). According to the author's suggestions for this first category, and in order to derive a model of hospital performance that will be less prone to context-specific factors, we decided to focus on collecting large and diverse amounts of qualitative data.

[5] A Reference Mode is a graph of a variable over time. Reference Modes are used at the beginning of System Dynamics Projects in order to depict the behaviour of a key variable over time. For more information, see: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.201.8533&rep=rep1&type=pdf

Figure 13. System dynamics-based research strategies for theoretical contributions. Source: De Gooyert (2019, p. 658).



Another factor worth mentioning is the fact that in the same article, De Gooyert (2019) classified the articles studied in a very similar way: (1) quantitative vs qualitative; (2) theory building vs theory testing; (3) according to the SD use (exploration, synthesis, discovery, explanation, and critique). This classification is exactly the same as the above mentioned one, if we consider that theory building is, in se, an inductive approach while theory testing is a deductive one. Thus, we followed this same classification for our research purposes as well, and used it to identify how we will approach each one of our five research questions and to decide which research strategy applies best to each of them. In the next section we will show how, according to that strategy, we made the decision how to conduct data collection and data analysis for each of the five research questions.

3.5.3 Choosing between different Participation Practices

In the article *Dynamics of participation* Király & Miskolczi (2019) compare three main different practices of participation identified in the literature, which are widely used by SD modellers. Each method emphasises more or less some of the four key factors of participation, that the authors argue that one can use as criteria to choose among them. Those four factors-criteria are: the *normative* factor (i.e., participation is a democratic right); the *substantive* factor (i.e., participation produces better knowledge); the *instrumental* factor (i.e., participation improves the chance of success); and the *transformative* factor (i.e., participation improves social capital). Depending on those factors, the researcher can choose between the three main participation techniques identified in Király & Miskolczi (2019) study, namely:

(1) *Group Model Building:* this is a professional and practical method, in which the focus is mostly on the substantive factor. In fact, Vennix (1996, 1999), one of the founders of this method, argues that the problem owners are the ones closer to the problem, thus eliciting their mental models is crucial for the success of the model building (substantive argument).

(2) *Participatory System Dynamics Modelling:* In this approach the focus is equally on all factors of participation. This approach is used for public policy decisions (e.g. in environmental wicked issues) and aims to involve stakeholders actively. The creation of a quantified, Stock-and Flow model is essential for this approach, as the emphasis is on testing different scenarios together with the stakeholders and then comparing and prioritising options based on the short-term and long-term outcomes of the different scenarios.
(3) *Community-based System Dynamics:* aims for the empowerment of (usually local) communities for the implementation of a policy, followed by long-term and deep commitment from the researcher. That is because "decision-makers" in fact cannot alone change embedded policy directions or challenge the status quo; they need social support among the citizenry. Thus, in this approach the focus is mainly on the transformative factor.

In this research, the *substantive* factor is the most relevant for our purposes. But the *substantive* factor is present in all the three approaches above, so our decision cannot be based solely on that criteria. Thus, we turned to De Gooyert et al. (2017) who wrote about *focusing on the decision-making organization* versus *focusing on stakeholder engagement.* In our study, stakeholders would be involved only during the first stages of qualitative modeling of the hospital performance CLD, as the focus of the study was on inductively eliciting their mental models and information rather than on testing different policies. Thus, in our research a medium level of participation was indicated, and based on Green & Hunton-Clarke's (2003) framework medium levels of stakeholders involvement are associated mostly with "informative" and less with "consultative" purposes. Green and Hunton-Clarke (2003) present a grid of typologies of participation based on the increasing levels of involvement of participants. Low levels of involvement are associated with informative and educational purposes; medium level of involvement is associated with consultative purposes; whereas high levels of participants' involvement are associated with decisional purposes. Our research purpose in this study is mainly informative (i.e., defining hospital performance and identifying the mechanisms that comprise it) and to some extent consultative (i.e., providing stakeholders with new policy insights that would foster performance in healthcare services in the long term). Thus, a medium level of participation is indicated for our study, based on Green and Hunton-Clarke's (2003) framework.

At a first glance, our research might seem more suited to *Participatory System Dynamics Modelling*, as it focuses on the public sector; or to community-based system dynamics, as it suggests the implementation of a new policy. However, in participatory system dynamics modelling the emphasis is on testing different scenarios together with the stakeholders and then compare and prioritise options, while in our study stakeholders will be involved only during the first stages of qualitative modelling of the hospital performance CLD, as the focus is on inductively elicit their mental models and information rather than on testing different policies. Seemingly, community-based system dynamics focuses on the implementation of the new policy and presumes a long-term, deep commitment from the part of the researcher, whereas in our research focus will be on the first stages of problem identification and system conceptualisation and the time constraints of the PhD program do not permit for a long-term commitment by the researcher. Furthermore, those last two approaches which are more focused on policy analysis and implementation presume a different kind of involvement from the part of the researcher or modeller.

Black (2013) used the theories of *social construction, distributed cognition* and *boundary-objects* to *"add science to the craft of GMB"*. She explained how SD models function as *"boundary objects"* under certain conditions and help visually in participatively create shared understanding and meaning. In his article *The impact of group model building on behaviour*, Rouwette (2016) also states that in GMB studies the researchers' interest has shifted from the *"participants as sources of information"* (i.e., using participants to elicit their knowledge) to the *"participants as recipients of information"* (i.e., changes in participants' knowledge and behaviour after the GMB, which is essential for the implementation of the model insights, recommendations and policies) and later on to *"participants as actively constructing information"* (i.e., focusing on the participants' behaviour during the GMB sessions and to the interaction between receiving and contributing information, in order to understand more of the underlying mechanisms that during the GMB sessions lead to changes in participants' knowledge and behaviour).

The decision by participants to share information during GMB is crucial to the modelling effort and, in order for this effort to succeed, interaction in GMB sessions is carefully structured in specially designed steps and procedures called "scripts" (Andersen & Richardson, 1997). Scripts are fairly sophisticated pieces of small group processes which - when placed together in a sequence - comprise a full modelling day and create products and deliverables (Andersen & Richardson, 1997). In their article *"Scripts for group model building"* Andersen and Richardson (1997) give practical insights regarding preparation of the GMB sessions (i.e., planning, scheduling, roles that facilitators undertake, closing and summing up). They also analytically present some of the scripts that they have developed in more than 15 years of experience with GMB session, and make explicit to modelers how and when to use each one as a "best practice" for high-quality GMB sessions. We followed closely those suggestions in the preparation and planning of our GMB sessions, as we will analytically present in the chapter 4.4.1.

Finally, Scott et al. (2015) reviewed GMB papers between 2002-2015 to identify when and how GMB should be applied and improved. They concluded, among others, that future research should focus on studies with applied settings (e.g., field experiments on applied problems) and on studies that are augmenting survey results with more objective measures (e.g., pretests and posttests). Following Scott et al.'s (2015) suggestion of *"augmenting survey results with more objective measures"* in GMB projects, in this empirical study we prepared and used a pretest and a posttest, together with the CICC[6] questionnaire in order to have an objective measure of validating the outcomes of our GMB sessions. We created the pretests and posttests beforehands, and we gave them to the participants right before and right after the GMB sessions to fill them in, so as to be able to observe and evaluate the differences in their answers. Both pretests and posttests consisted of the same two-pages, asking participants the exact same four questions, namely: to describe the main problem related to hospital performance that their department/division is currently facing; its causes; its consequences; and any actions for improvement

[6] As a means of better relating, understanding and evaluating GMB process elements and their effects, Vennix et al. (1993, 2000) designed the CICC questionnaire, where each of the four letters represents one of the four scales of the questionnaire, namely: Consensus, Insight, Communication and Commitment to action (CICC). This questionnaire has been shown as an effective way to add validity to the results of GMB projects, serving as an example of a possible standard assessment tool for the method (Rouwette et al., 2011).

they could think of.

Figure 14. Choosing between different Participation Practices:
Approach & Research Strategy per Research Question

Research Question	**Process** Costanza and Ruth (1998)	**SD Modeling Steps** Martinez-Moyano & Richardson (2013)	**Quantitative vs Qualitative SD modelling** De Gooyert (2016)	**Inductive vs Deductive Approach** De Gooyert (2016)	**SD use** Harrison et al.(2007); De Gooyert (2016)	**Research Strategy** De Gooyert (2019)	**Data Collection**
1	Initial Scoping & Consensus Building	1.Problem Identification & Definition 2.Model Conceptualisation	Qualitative	Inductive	Explanation	Grounded theory building	-Literature -Documents -Interviews -GMB sessions
2	Initial Scoping & Consensus Building	1.Problem Identification & Definition 2.Model Conceptualisation	Qualitative	Inductive	Explanation	Grounded theory building	-Convergent version c Hospital Performance CLD
3	Initial Scoping & Consensus Building	1.Problem Identification & Definition 2.Model Conceptualisation	Qualitative	Deductive	Explanation	Grounded theory building	-DPM canvas c Hospital Performance
4	Realistic Research Modelling	3.Model Formulation & Calibration 4.Model Analysis & Evaluation	Quantitative	Deductive	Prediction	Phenomenon driven explanation	-Convergent version c Hospital Performance CLD -Literature -Online Documents
5	High Precision Management Model	5.Policy Analysis 6.Model Implementation & Use	Quantitative	Deductive	Prescription	Management flight simulator	-Policy model c Hospital Performance

3.5.4 Choosing between different Stakeholder Categories (Stakeholder Analysis)

We mostly agree with the view of Bryson (2004) that in the public sector *it is wise to begin any stakeholder identification and analysis procedures with a more inclusive definition.* Thus, we decided to adopt a broad view of stakeholders in this research study, including people and groups who have no power over decisions and changes

in the hospital, in the PM system or in the healthcare system in general. Such people or groups of people involved, somehow, in the hospital performance include: hospital managers and quality managers, the hospital board of directors, administration staff, hospital workers, doctors, nurses, patients of different ages, patients' families and friends, hospital suppliers and other external collaborators, NGOs relevant to health issues, workers' associations and labour unions, journalists and press/media owners, politicians and decision makers, workers and managers of regional health offices and of the Ministry of Health. This list is very long, and we certainly could not afford to include all those people in our GMB sessions, thus we conducted a stakeholder analysis in order to decide which of those stakeholder categories are the most relevant and the most appropriate for our research purposes.

In their article *Reviewing the role of stakeholders in Operational Research: A stakeholder theory perspective*, the authors (De Gooyert et al., 2017) discuss a framework - drawn from stakeholder's theory - for appropriate selection and effective work with stakeholders in Operational Research studies and/or in organisations' practice, such as during participative workshops. First, they try to answer why stakeholders' involvement is crucial (instrumental versus moral stakeholder theory; focusing on trade-offs versus focusing on avoiding trade-offs; and focusing on the decision-making organization versus focusing on stakeholder engagement). Then they try to answer how stakeholders are more effectively involved and how we should better work with them, depending on the purpose of the workshop, the role of the analyst, the type of data used, and the intended results (optimizing, balancing, structuring and involving). Following their paradigm, and in order to choose among the options available the one that best suits our research objectives, we constructed a grid upon which we decided what stakeholders to involve and which participation practice to use. The intention here was to coherently and consistently answer three fundamental questions: WHY (for what reasons, with what purpose), WHO (what people and groups of people) and HOW (using what participation practice) to involve stakeholders. The third question "HOW" (using what participation practice) is already answered in chapter 3.5.4, where we analytically present the reasons why we finally chose *Group Model Building* as the participation practice to involve stakeholders in our research study. Now we will show the logic according to which we answered to the "WHY" and "WHO" questions.

Bryson (2004) first proposed that stakeholders' identification and analyses technique should be chosen carefully, depending on the context, the purpose, the expected results and other factors. In the public and non-profit sectors, problems are almost always "wicked" as problem owners are diffuse in the society, and the responsibility of fixing those problems is also diffused in many groups and individuals, making it more difficult for decisions that satisfy them all to be found and – even worse – implemented. Seemingly, De Gooyert et al. (2017) claimed that stakeholders' identification should be linked to the purpose of the workshop and the intended results. This means that we cannot fully answer the "WHO" question unless we first answer the "WHY" question. Thus, we first tried to answer the "WHY" question, i.e., for what reasons and with what purpose we are involving stakeholders in our research. We concluded that the main reasons for involving stakeholders in our study are: (1) Expertise and specific knowledge on aspects of hospital performance; (2) Support and consensus building on what is hospital performance and what are its mechanisms; (3) Better implementation; (4) Diversity of views and validation of the model through disconfirmation; (5) Improving relationships between stakeholders; and (6)

Understanding stakeholders' needs and interests.

Mitchell et al. (1997) propose that stakeholders' identification and salience (descriptive theory) should be dynamically decided based upon the existence in a group of people of three attributes:1) legitimacy of their relation with the firm, 2) power to influence the firm, 3) urgency of their claim on the firm. By legitimacy the authors mean the *"generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions"* (Mitchell et al., 1997, pp. 866); by power "*the ability of those who possess it to bring about the outcomes they desire"* (Mitchell et al., 1997, pp 865); and by urgency *the "degree to which stakeholders claim for immediate attention"* (Mitchell et al., 1997, pp. 867). We could think of legitimacy as a moral/ethical attribute of social responsibility (idealistic/ deterministic view of the world), whereas we can think of power and urgency as an amoral/unethical attribute of social responsiveness (imperfect/ stochastic -socially and behaviourally constructed - view of the world). Since, according to the authors, all three views (power, urgency, legitimacy) must be taken into account during the stakeholders identification, we should select and invite to the GMB sessions: stakeholders who should ethically or typically be present in the GMB sessions (legitimacy); stakeholders whose opinion really counts (power); stakeholders who are indeed interested in participating (urgency).

Summarising and combining all the participation and stakeholder theories and criteria that the above-mentioned studies provide us with, and in order to choose among the options available the ones that suits best our research objectives, we constructed a grid upon which we decided what stakeholders to involve and what participation practice to use. Again, the intention here was to coherently and consistently answer three fundamental questions here: WHY (for what reasons, with what purpose), WHO (what people and groups of people) and HOW (using what participation practice) to involve stakeholders. In the following grid we summarise the above-mentioned stakeholder analysis, regarding the "WHY", "HOW" and "WHO" questions.

Figure 15. Choosing between different Stakeholder Categories:
Stakeholder Analysis

WHY **Reasons for involving Stakeholders**	**Uses of stakeholders' involvement** (normative, substantive, instrumental, transformative) **(Király & Miskolczi, 2019)**	**Intended results** (optimizing, balancing, structuring, involving) **(De Gooyert et al., 2017)**	**Appropriate Level of ST Involvement**	**HOW** **to involve Stakeholders** (informative educational consultative decisional) **(Green & Hunton-Clarke, 2003)**	**Appropriate Participation Practices** (Group model building, Participatory system dynamics modelling, Community-based system dynamics)	**Attributes for identification and salience of Stakeholder Groups** (Power Legitimacy Urgency) (**Mitchell et al., 1997)**	**WHO** **To involve**

					(Király & Miskolczi, 2019)		
1 Expertise and specific knowledge on aspects of hospital performance	substantive normative	focusing on the decision-making	Low ST Involvement	Informative	GMB Because we want to heavily involve them And actually The original tradition of SD, of forester that said "you don't do sd in isolation" You want to validate the model with knowledgeable people	1.Legitimacy 2.Urgency (because those who have urgency have a higher interest in the problem, so they want to get info on the problem and they want to solve it)	**hospital managers and quality managers**
2 Support and consensus building on what is hospital performance and what are its mechanisms	instrumental normative	focusing on the decision-making	Medium ST Involvement	Consultative	GMB. The more likely they are to resist, the more I give them. If they are less likely, I just need to inform them, invite them at the beginning and in the end. But the rest, I need to heavily involve them in all sessions	1.Power (you dont need to include people who cannot/have not the power to resist) 2.Legitimacy 3.Urgency	**administration staff, hospital workers, doctors, nurses, patients of different ages**

3 Better implementation (less resistance) on the changes in structure measures proposed by our research	instrumental transformative	focusing on the decision-making	Medium ST Involvement	Consultative	GMB =Medium level of involvement	1.Power (but also frontline workers who will have to implement the change, have power to resist - not only decision makers) 2.Legitimacy	**NGOs relevant to health issues, workers' associations and labour unions, journalists and press/media owners, politicians and decision makers, workers and managers of regional health offices and of the ministry of health**
4 Diversity of views and validation of the model through disconfirmation	substantive	focusing on the decision-making	Low ST Involvement	Informative	Nominal Group Technique	1.Urgency 2.Legitimacy "Fringe Stakeholders" (we want everyone, even people beyond our scope, just to investigate / diverse)	**hospital managers and quality managers administration staff, hospital workers, doctors, nurses, patients of different ages**
5 Improving relationships between stakeholders	transformative	focusing on stakeholder engagement	High ST Involvement	Decisional	Community based SD (BUT only if I want to invest a lot in the relationship) Otherwise do a GMB and invite them in the first and last session.	1.Legitimacy 2.Power Not Urgency (but they might become urgent in the future, so I may want to involve them)	**hospital managers and quality managers administration staff, hospital workers, doctors, nurses, patients of different ages**
6 Understanding stakeholders' needs and interests	transformative	focusing on stakeholder engagement	High ST Involvement	Decisional	Community-Based SD	Urgency	**NGOs relevant to health issues, workers' associations and labour unions, journalists and press/media owners, politicians and decision makers, workers and managers of regional health offices and of the ministry of health**

As mentioned already, we concluded that the main reasons for involving stakeholders in our study, answering to the "WHY" question, are: 1)Expertise and specific knowledge on aspects of hospital performance, 2)Support and consensus building on what is hospital performance and what are its mechanisms, 3)Better implementation, 4)Diversity of views and validation of the model through disconfirmation, 5) Improving relationships between stakeholders, 6)Understanding stakeholders' needs and interests. We decided that between those reasons, the most important ones for the purposes of our study are: 1) Expertise and specific knowledge on aspects of hospital performance, 2) Support and consensus building on what is hospital performance and what are its mechanisms, 4) Diversity of views and validation of the model through disconfirmation, and 5) Improving relationships between stakeholders.

As obvious from the above grid, for those reasons the best-suiting approach is GMB, and the most relevant stakeholder categories are: hospital managers and quality managers, administration staff, hospital workers, doctors, nurses, and patients of different ages. Thus, our extensive stakeholder analysis identified those five stakeholder categories as the most appropriate for our research purposes: hospital managers, doctors, nurses, paramedics and patients.

3.6 Research Design

Including the research methods that we used, our research purpose is informed as follows: The purpose of this case-based, theory-oriented research study is to: (1) Empirically conceptualise a qualitative system dynamics model or *Causal Loop Diagram* (Forrester, 1961; Richardson & Pugh,1981; Sterman, 1989, 2000) of hospital performance, as perceived by stakeholders of a Greek public hospital who are participating in *Group Model Building* sessions (Andersen & Richardson, 1997; De Gooyert, 2016, 2018; De Gooyert et al., 2019; Richardson & Andersen, 1995; Vennix, 1996); (2) Use this model in order to explain the negative consequences of the Greek healthcare reform on hospital performance, and (3) Provide policymakers with the tools to re-design health policies in Greece using the *Dynamic Performance Management approach* (Bianchi, 2016).

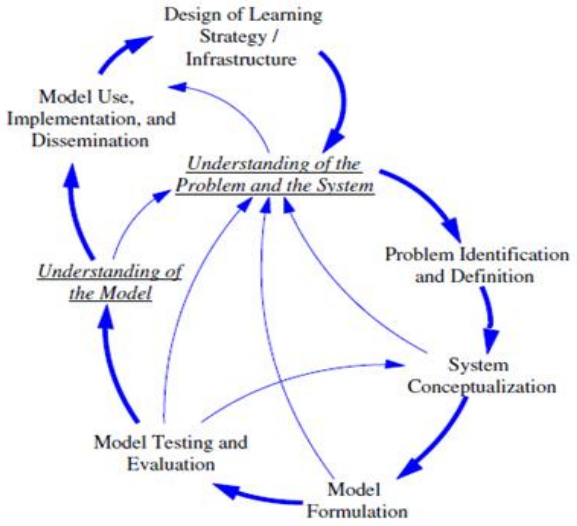
Furthermore, this research attempted to address the following research questions, where in parenthesis after each research question we note the corroborative type of knowledge that the research question is seeking to acquire (Denscombe, 2012, p.78).

1. How do stakeholders define hospital performance? (Descriptive)
2. What are the main feedback loops driving hospital performance, as perceived by stakeholders? (Descriptive)
3. How can those feedback loops explain the documented negative outcomes of the Greek healthcare reform? (Explanatory)
4. What are the main strategic resources impacting hospital performance measures and what are the main performance drivers that are impacting intermediate products and end results? (Explanatory)
5. What are the practical implications of the study for policy design in Greek public hospitals? (Prescriptive)

In their article *Best practices in system dynamics modeling* Martinez- Moyano and Richardson (2013) identified 72 best practices suggested by 25 experts in the SD field, and they grouped them by importance (average,

high, highest) into six categories, which represent the six stages of the SD modeling process. 27 of those practices were rated as the most important. Most of those 27 practices were taken into consideration during the whole research procedure of this study, i.e., while creating the interview guide; while preparing and conducting the interviews and the GMB sessions; and while analysing the data and drawing the conclusions. The six SD stages mentioned by Martinez-Moyano and Richardson (2013) are found in most SD textbooks under the same or similar names, and are followed by most researchers in the SD community. Those steps, which are followed in an iterative way, are adapted in our research study as follows: (1) Problem identification and definition, (2) System conceptualisation, (3) Model formulation, (4) Model analysis, testing & evaluation, (5) Policy analysis, and (6) Model use, implementation and dissemination.

Figure 16. The six stages of System Dynamics Modeling. Source: Moyano & Richardson (2013, p. 108).



Costanza and Ruth (1998) introduced a 3-step process for SD participatory modeling projects on wicked socio-economic problems: (1) Initial scoping and consensus building stage (initial model of high-generality, low resolution); (2) Realistic research modeling stage (collection of historical data for calibration, testing and analysis of areas of uncertainty); and (3) High precision management model stage (producing scenarios, adaptive management options and policy recommendations). The authors note that those three stages should be followed in this order, as jumping to conclusions before building enough consensus would probably be catastrophic for the project's success, as well as that maintaining stakeholders' involvement during all three stages is crucial for the success of the process. They also state that there is a trade-off between increasing the model's resolution and complexity on the one side and keeping the model's accuracy and predictability, on the other side; thus, we chose an intermediate resolution level in the second stage. Our research followed those three stages proposed by Costanza and Ruth (1998) combined with the six steps described above, although giving different attention to each of those stages as we will explain further on in this section. In the following pages, we analytically present the methods we used for answering each one of the RQs:

Figure 17. SD Modeling Steps & Process followed per Research Question

Research Question	Costanza and Ruth (1998) 3-steps process	Martinez-Moyano & Richardson (2013) 6-steps process
1 2 3	Initial Scoping & Consensus Building	1.Problem Identification & Definition 2.Model Conceptualisation
4	Realistic Research Modelling	3.Model Formulation & Calibration 4.Model Analysis & Evaluation
5	High Precision Management Model	5.Policy Analysis 6.Model Implementation & Use)

Methods for RQ1: How do stakeholders define hospital performance? (Descriptive)

In order to answer this research question, we followed an inductive approach and used divergent techniques of qualitative SD modelling in order to empirically conceptualise hospital performance as a system, perceived by the hospital stakeholders. The stages of SD modeling which correspond to this *Initial Scoping & Consensus Building* phase of modeling were: *Problem Definition* and *Model Conceptualisation*. More specifically, for the *Problem Definition* we:

(1) Conducted a scoping review of the international literature of PM in Healthcare, in order to first identify and highlight gaps in the literature regarding the negative outcomes of PM policies on performance of Healthcare services;

(2) Conducted a critical review of the Greek literature around the negative effects and consequences of the PM policies adopted by public hospitals after the Greek healthcare reform, in order to define the problem of low hospital performance and the Reference Mode;

(3) Conducted a narrative analysis of the open-access documents collected and of the preliminary interviews conducted with four hospital stakeholders, in order to enrich and validate our critical review findings and strengthen our hospital performance definition through triangulation.

For the *Model Conceptualisation* we:

(4) Conducted an extensive stakeholder analysis, in order to decide upon the key stakeholder categories which better serve our research purposes, prepare and organise the GMB sessions, and prepare the first part of the Disconfirmatory Interview Guide;

(5) Conducted GMB sessions (in Greek) with ten stakeholders of the case-hospital, in order to define hospital performance according to participant stakeholders and build the *Scoping Model of Hospital Performance* (divergent CLD version, created with stakeholders), which we translated in English.

Methods for RQ2: What are the main feedback loops driving hospital performance, as perceived by stakeholders? (Descriptive)

In order to answer to this research question, we followed a deductive approach and used convergent techniques of qualitative SD modelling (Causal Loop diagrams) to empirically model hospital performance as a system perceived by the participant stakeholders. The stages of SD modeling which correspond to this *Realistic Research Modelling* phase were: *Model Formulation & Calibration* and *Model Analysis & Evaluation.* More specifically, for the *Model Formulation & Calibration* we:

(6) Conducted *Disconfirmatory Interviews* (Andersen et al., 2012) with stakeholders of other Greek public hospitals in order to refine, enrich, strengthen and validate the *Scoping Model of Hospital Performance* (divergent CLD version, created with stakeholders of the case hospital);

(7) Conducted a Critical Review of the international literature around the model variables, in order to validate our model variables, the causal relations and loops through triangulation;

(8) Conducted a number of structure tests, in order to increase confidence in our model;

(9) After validation and calibration, the *Conceptual Model of Hospital Performance* (Convergent CLD version) was created and took its final form, ready to be used as the basis for our model analysis.

For the *Model Analysis & Evaluation* we:

(10) Defined, explained and discussed all the model variables and causal links, according to the participant stakeholders;

(11) Recognised, nominated, explained and discussed all the model loops, which constitute the mechanisms that the hospital performance is comprised of according to the participant stakeholders.

Methods for RQ3: How can those feedback loops explain the documented negative outcomes of the Greek healthcare reform? (Explanatory)

In order to answer to this research question, we also followed a deductive approach and used convergent techniques of qualitative SD modelling (Causal Loop diagrams) to analyse the hospital performance as a system, perceived by the hospital stakeholders. The stage of SD Modeling which corresponds to this *Realistic Research Modelling* phase was again the *Model Analysis & Evaluation.* More specifically, we:

(12) Conducted a Critical Review of the Greek literature around the negative consequences of the healthcare reform, in order to gather and list all the documented counterintuitive negative outcomes of the current performance management policies on the hospital performance;

(13) Conducted an Analysis of the loops of the model, in order to derive Dynamic Hypotheses that could explain the documented negative outcomes on performance.

Methods for RQ4: What are the main strategic resources impacting hospital performance measures and what are the main performance drivers that are impacting intermediate products and end results? (Explanatory)

In order to answer this research question, we followed a deductive approach (DPM methodology) and used convergent techniques. More specifically, we:

(14) Identified in the *Conceptual Model of Hospital Performance* the variables which constitute *Strategic Resources*, *Performance Drivers*, and *End Results*;

(15) Identified in the *Policy Model of Hospital Performance* the variables which constitute *Strategic Resources*, *Performance Drivers*, *End Results*;

(16) Transformed the *Policy Model of Hospital Performance* (Convergent CLD version) model into a DPM canvas;

(17) Analysed it according to the Instrumental, Objective and Subjective DPM views.

Methods for RQ5: What are the practical implications of the study for policy design in Greek public hospitals? (Prescriptive)

In order to answer this research question, we followed a deductive approach and used prioritisation techniques of qualitative SD modelling (Causal Loop Diagrams) to empirically create and analyse the *Policy Model of Hospital Performance*, as deducted from the documents analysis. The stages of SD Modeling which correspond to this *High Precision Management Model* phase were: *Policy Analysis* and *Model Implementation & Use*.

Figure 18. Methods Used for each Research Question

Research Question	**Research Strategy**	**Data Collection**	**Data Analysis**	**Results**
1.How do stakeholders define hospital performance? (Descriptive)	-Inductive approach -Divergent Phase/ Qualitative SD modelling	-International Literature	-Scoping Review	-Highlight gaps regarding the negative outcomes of PM policies on performance
	-Initial Scoping & Consensus Building:	-Greek Literature	-Critical Review	-Define Problem statement & Reference mode
	1.Problem Definition	-Official, open-access online digital text-documents (regarding the legislation and implementation of performance management policies and policies for performance improvement in Greece) -Preliminary Interviews	-Narrative analysis with open and axial codes according to Turner et al.'s (2014) approach -Stakeholder Analysis	-Define Reference mode, and PM Goals set by Division Managers
	2.Model Conceptualisation	-GMB sessions	-Scripts (Anderson & Richardson, 1997)	- validate/strengthen Problem Definition & Ref.

			-Building CLDs of Hospital performance with stakeholders -VENSIM (Ventana) software used to facilitate modelling during the GMB sessions - STELLA (Isee Systems) software will be used for model analysis, validation and presentation of the results.	Mode through triangulation -Preparation of GMB sessions (Anderson & Richardson, 1997) -Preparation of Disconfirmatory Interview Guide (Andersen et al., 2012) -Hospital performance definition -Scoping Model of Hospital performance (Divergent CLD version)
2.What are the main feedback loops driving hospital performance, as perceived by stakeholders? (Descriptive)	-Deductive approach -Convergent Phase/Qualitative SD modelling (CLD) -Realistic Research Modelling 3. Model Formulation & Calibration 4.Model Analysis & Evaluation	-Disconfirmatory Interviews -International Literature around the model variables	-VENSIM (Ventana) software used to facilitate modelling during the disconfirmatory interviews -Critical Review Model Validation -Analysis of model variables and causal links -Analysis of model loops	 -Conceptual Model of Hospital performance (Convergent CLD version) -Policy model of Hospital performance - Mechanisms of hospital performance
3.How can those feedback loops explain the documented negative outcomes of the Greek healthcare reform? (Explanatory)	4.Model Analysis & Evaluation (continuation)	-Greek Literature -Mechanisms of hospital performance	-Critical Review -Model Analysis using Feedback Loops, Systems Archetypes and Themes -VENSIM software used for the model analysis	Deriving Dynamic Hypotheses
4. What are the main strategic resources impacting hospital performance measures and what are the main performance	-Deductive approach -Dynamic Performance Management (DPM) framework - Instrumental view	-Conceptual Model of Hospital performance (Convergent CLD version)	-DPM analysis	-DPM canvas of Hospital performance

drivers that are impacting intermediate products and end results? (Explanatory)				
5. What are the practical implications of the study for policy design in Greek public hospitals? (Prescriptive)	-Deductive approach -Prioritisation Phase/Quantitative SD modelling -High Precision Management Model -Policy Analysis	- Official, closed-access, internal paper-printed text-documents of the hospital's interdepartmental communication (regarding mostly the performance and quality targets set by the different departments of the case hospital) -DPM canvas of Hospital performance -Policy model of Hospital performance	-Narrative analysis with open and axial codes according to Turner et al.'s (2014) approach	-Sustainable Policies and suggestions for improved Hospital performance

3.7 Conclusion

In this study, we adopted a *systemic* (Meadows, 2008), *participatory* (Kiraly & Miskolczi, 2019), *inductive* (Luna-Reyes & Anderson, 2003) and *dynamic* (Bianchi, 2016) approach by combining the methodologies of *Group Model Building* (Andersen & Richardson, 1997; De Gooyert, 2016, 2018; De Gooyert et al., 2019; Richardson & Andersen, 1995; Vennix, 1996;), and *System Dynamics Modeling* (Forrester, 1961; Richardson & Pugh, 1981; Sterman, 1989, 2000) into the *Dynamic Performance Management Approach* (Bianchi, 2016). Our main methodological approach, the so-called *Dynamic Performance Management (DPM)* approach (Bianchi, 2016) is a combination between traditional Performance Management in the public sector (Bouckaert & Halligan, 2007; Bouckaert & Peters, 2002; Elg et al., 2013; Karra & Papadopoulos, 2005) and the *System Dynamics (SD)* methodology. It has already been successfully used to support decision-making processes in organisational, institutional and governmental settings (Bianchi, 2016; Bianchi et al., 2017; Bianchi & Tomaselli, 2015; Borgonovi et al., 2018; Munteanu & Newcomer, 2020; Noto & Noto, 2019), while it also permits engaging stakeholders both from the internal and external environment. Other research traditions identified in our study are the *Stakeholders Theory* (Bryson, 2004; Freeman, 1984; Mitchell et al., 1997; De Gooyert et al., 2017) and *Participation* (Király & Miskolczi, 2019; King & Kraemer, 1993; Rouwette, 2016; Schweiger et al., 2018). All those approaches stand in the constructivist side of the continuum as research approaches, because they all consider realities as subjective, complex and multi-layered, actively shaped by perceptions and opinions of stakeholders (De Gooyert, 2019; Lane & Schwaninger, 2008).

We followed a qualitative approach as the emphasis of our study was on eliciting knowledge stored in the mental models of participants and on knowledge-building (Turner et al., 2014).). Through the modelling sessions, this knowledge was elicited and stored in the model of hospital performance, which is again a qualitative system dynamics model showing the causal links between different variables related to performance (Causal Loop Diagram). Emphasis on causality is another reason why a qualitative approach was selected, as causality cannot be easily inferred by merely quantitative approaches. A qualitative approach has made it easier to elicit and depict those causal relations between different factors, according to the participants' experience, beliefs and perceptions. In accordance with De Gooyert (2016, 2018), this exploratory study used a case-based (*Grounded Theory Building)* strategy, which iteratively uses existing theory and case qualitative data for model building to make a theoretical contribution in the field of performance management in the public sector using the Dynamic Performance Management approach. More specifically, this theory-oriented research project used a case-study in order to shed light on how hospital performance is perceived by stakeholders in a Greek public hospital and what mechanisms drive its trend (dynamic behaviour). All those stakeholders' perceptions were captured in a model, and the model was used in order to explain the documented, counterintuitive negative outcomes on the hospital performance which followed the Greek healthcare reform.

According to De Gooyert and Größler (2018) there are many differences between applied and theoretical SD modelling. Those differences had several implications for the research design, and more specifically for the modeling steps that we followed, for the data collected and for the model boundary. Following the paradigm of De Gooyert et al. (2017) for appropriate selection and effective work with stakeholders, and in order to choose among the options available the one that best suits our research objectives, we constructed a grid upon which we decided what kind of stakeholders to involve; which participation practice to use; and how to implement this practice and involve them. Again, the intention here was to coherently and consistently answer three fundamental questions: WHY (for what reasons, with what purpose to involve stakeholders); HOW (using what participation practice to involve stakeholders); and WHO (what stakeholders or groups of stakeholders to involve). Our extensive stakeholder analysis and the grid created revealed that the best-suiting approach is GMB, and the most relevant stakeholder categories are: hospital managers and quality managers, administration staff, hospital workers, doctors, nurses, and patients of different ages.

CHAPTER 4 – DESCRIPTION OF THE METHODS

In chapter 4 we analytically present and describe the methods used to conduct our research. More specifically, we describe the data sources (i.e., literature, documents, participants); the data collection methods (i.e., documents collection, preliminary interviews, planning of GMB sessions, disconfirmatory interviews) and the material prepared and used for the data collection; the procedure of the whole research project in general and of the GMB sessions in particular; the procedures undertaken regarding gaining access to the case hospital; as well as the methods used for the data analysis.

4.1 Data Sources

Mixed methods were used to facilitate our approach, combining primary qualitative data from two Group Model Building (GMB) sessions, four open, unstructured preliminary interviews and seven semi-structured, disconfirmatory interviews, with secondary qualitative data from a scoping and from a critical literature review and from official, open-access, online text-documents and closed-access, internal text-documents of the hospital's interdepartmental communication.

Literature: Qualitative data were initially drawn from the literature in order to present the state of the art in the field and point where the literature discussion is at the moment and identify gaps.

Documents: The official, open-access, online, digital text-documents that we collected and used were circulars and other official documents regarding the legislation and implementation of performance management policies and policies for performance improvement in Greece, as well as documents and publications regarding targets and objectives of governing and regulating bodies. Those documents included circulars, official decisions, regulations and statements of performance targets, frameworks and objectives. The official, closed-access, paper-printed text-documents of the hospital's interdepartmental communication mostly regarded performance targets set by the different departments of the case hospital, and included minutes of hospital council's meetings; decisions of the Quality Committee of the Hospital; and other official documents of the hospital's official internal (intra-departmental and interdepartmental) communication.

Participants: All the participants were stakeholders of the case hospital, who necessarily needed to fall into the five stakeholder categories that our extensive stakeholder analysis identified, namely: hospital managers, doctors, nurses, paramedics and patients.

Starting from the gatekeeper, who was identified through an open call for participation sent to many hospitals by the researcher, snowball sampling was used to select 10 participants for the GMB sessions in total, including at least one person from each main key-stakeholder category, all of whom were employees or patients of the case hospital. A group of ten employees of the case hospital (one hospital manager, one doctor, five nurses-three of whom were managers of their nursing departments, one paramedic and two patients) joined each of the two sessions. We made sure that the group of participants included at least one person from each main key-stakeholder category that our extensive stakeholder analysis identified, and that among those ten people there was

at least one representative of each of the four divisions of the hospital (administrative, technical, nursing and medical). Four of them (including the gatekeeper) were also interviewed before the GMB sessions (face-to-face, one-to-one preliminary interview).

The GMB sessions were conducted a few weeks before the first coronavirus total lockdown in Greece and because of the coronavirus emergency (which prohibited further visits to the case-hospital or to other hospitals, and inhibited the possibility to continue the snowball sampling) we used convenient sampling in order to identify seven more participants for the disconfirmatory interviews. Those seven individuals were again public hospital stakeholders who fall into the five main key-stakeholder categories and each one of them works or has been hospitalized in a different public hospital. Thus, we had participant stakeholders from seven different public hospitals of different regions and cities of Greece (Heraklion Crete, Sitia, Thessaloniki, Athens, Giannena, Kavala, Kalamata) which strengthens the validity of our findings.

4.2 Data Collection

Documents Collection: The official, open-access, online digital text-documents we used were found and downloaded from the websites of WHO[7] and of the European Institute of Public Administration[8], from the websites of the Greek Ministry of Health[9], of the Greek Ministry of Finance[10], of the Greek Ministry of Interior and Administrative Reconstruction[11], from the websites of 1st and 2nd Health Regions of Athens[12] and of the Greek National Quality Institutions ESYP[13] and EKAPTY[14], as well as from the website of the web-based repository of BI-Health[15] and finally from the website of the case hospital[16]. Some of them were not easily accessible, so the

[7] Retrieved from: https://www.who.int/hospitals/management-and-quality/en/
https://apps.who.int/iris/bitstream/handle/10665/107808/E89742.pdf?sequence=1&isAllowed=y
https://apps.who.int/iris/handle/10665/107808
https://apps.who.int/iris/handle/10665/107591

[8] Retrieved from: https://www.eipa.eu/portfolio/european-caf-resource-centre/

[9] Retrieved from: https://www.moh.gov.gr/articles/ministry
https://www.moh.gov.gr/articles/news/4541-strathgikoi-stoxwn-kai-aksones-parembashs-toy-ypoyrgeioy-ygeias-gia-tis-yphresies-ygeias-ths-xwras-me-xronikh-periodo-efarmoghs-thn-trietia-2017-2020-raquo

[10] Retrieved from: https://www.taxheaven.gr/law/4369/2016

[11] Retrieved from: https://e-quality.ydmed.gov.gr/index.php,
https://www.ypes.gr/koino-plaisio-axiologisis-kpa-egcheiridio-kai-odigos-efarmogis/#
https://web.archive.org/web/20110117140328/http://www.gspa.gr/
https://www.ypes.gr/wp-content/uploads/2019/11/20170804_odhgos_efarm.pdf

[12] Retrieved from: http://www.1dype.gov.gr/?page_id=424
https://www.2dype.gr/yphresies/oikonomiki-dieuthinsi/oikonomika-stoixeia

[13] Retrieved from: http://www.esyp.eu/

[14] Retrieved from:
https://www.hellascert.gr/ta-meli/ekapty-ae-ethniko-kentro-aksiologisis-tis-poiotitas-kai-technologias-stin-ygeia-a-e/

[15] Retrieved from: http://portal.bi.moh.gov.gr/

[16] Retrieved from: https://www.laiko.gr/index.php?option=com_content&view=article&id=16&Itemid=5
https://www.laiko.gr/index.php?option=com_content&view=article&id=194&Itemid=217

researcher identified them with the help of the gatekeeper who is the manager of the quality department of the case hospital.

The closed-access, internal text-documents of the hospital's interdepartmental communication were gathered by the gatekeeper (who is also one of the participants in the GMB sessions and an employee/ manager of the quality department of the case-hospital) and were sent as a scanned hard copy to the researcher via email. They are available in Appendix 16 and Appendix 17.

Preliminary Interviews: Those were open, unstructured interviews, conducted with four of the hospital workers, including the quality manager and the gatekeeper. Those interviews had the purpose of getting in touch with the participants, understand the situation in the hospital and the challenges they face and decide upon the scope of the research and the procedure of the GMB sessions that the researcher would follow, e.g., weather to start from scratch or use a *concept model*[17] (Richardson, 2013). No specific interview guide was used for those interviews. During the interviews, and according to the flow of the talk, the researcher asked from the participants to talk about: their everyday tasks; priorities and things which are considered important in their work; main challenges and problems they face in their work; performance issues they can think of in the department or unit of the hospital where they work.

GMB Sessions: We decided to start from scratch our GMB sessions, and not to use a *concept model*[18] because it was considered important by the researcher that the group would "own" the model and that the *concept model* would not become an "anchor" (Richardson, 2013). Thus, starting from a *concept model* was considered too risky for the success of the process and was avoided, in order to keep the participants' motivation, attention and originality of ideas, but also in order not to guide them in any way. Starting the model from scratch is also a way to verify our findings from the literature review and strengthens the external validity of our research results.

For the preparation of the GMB sessions we used the preparation procedures and the *Scripts for group model building* proposed by Anderson and Richardson (1997) and by the *Scriptapedia*[19]. Scripts are *fairly sophisticated pieces of small group process* (Anderson & Richardson, 1997) that were placed end-to-end in a sequence in order to help the researcher prepare and facilitate the full two-day modeling conference of GMB sessions in the case. More specifically, we borrowed the *Preceding Scripts* (Creating a Shared Vision of Modeling Project, Logistics and Room Set Up, Process Mapping, Scheduling the Day) and the *Follow-up (Debriefing)*

https://www.laiko.gr/index.php?option=com_content&view=article&id=57:2009-10-02-17-16-26&catid=11:2009-09-28-20- 42-23&Itemid=34

[17] The *concept model*s (Richardson, 2013) are, according to the authors, *small models artfully designed to introduce elements of the system dynamics approach to participants in a group model building intervention and to initiate discussion*. They are small, incomplete pieces of System Dynamics model structure prepared by the researcher or facilitator, to be used as a starting point for the Group Model Building sessions. They can be constructed in the form of a small, incomplete "Causal Loop Diagram" or "Stock and Flow model".

[18] *Concept models* have the advantage of introducing participants to the problem at hand, to the iconography of System Dynamics and simulation software, and to motivate the group discussion on model conceptualization fast, without too many technical details and explanations. However, the use of concept models entail a number of dangers, as described in the article by Richardson (2013).

[19] Scriptapedia is a guide to Group Model Building, meant to be a widely available and conveniently edited book to promote the development of new scripts; the discussion of what works and what doesn't work; and the internationalization of the group modeling activity. For more information, see: https://en.wikibooks.org/wiki/Scriptapedia

scripts, together with the following scripts, which we adapted according to our special needs and goals: *Elephant Parable, Modeling Project Community Presentation, Hopes and Fears, Graphs Over Time, Variable Elicitation, Initial Policy Options, Nominal Group Technique, Creating Causal Loop Diagram from Variable List, Initiating and Elaborating a "Causal Loop Diagram", Next Steps and Closing,* and *Key Take-Away.*

Disconfirmatory Interviews: Those interviews mostly had the purpose of validating and increasing confidence in the model, by using stakeholders from different hospitals to "disconfirm" variables or links of the model created in the case hospital. An interview guide was used for those interviews, available in Appendix 10.

Those interviews were composed of two different parts. The first part contained open questions on four different modules: (1) Performance Roles and Duties; (2) Performance definition and related variables; (3), Performance mechanisms; and (4) Performance measures. Those modules and the questions that each module contained were created based on the literature review and the preliminary results of our GMB sessions.

The second part of the Disconfirmatory Interviews contained the discussion of the *Scoping Model of Hospital Performance* (i.e., the the divergent CLD model of hospital performance which was created by the GMB participants of the case hospital during the GMB sessions). Based on the interviewee's agreement or disagreement on the causal relations and variables, we refined this model during the disconfirmatory interviews by deleting the causal relations and variables upon which the interviewees disagreed.

Material: A wide range of documents and presentations were created to facilitate our research purposes. Since all our participants were Greek and all the interviews and GMB sessions were conducted in the Greek language, most of the material was translated in Greek for their convenience. The material created and used is presented in the list below and is available in the Appendixes of this thesis:

(1) The material created and used for identifying the case hospital and the participant gatekeepers was a *Call for Participants* PowerPoint Presentation, available in Appendix 1.

(2) The material created and used for sending the Formal Request for Access in the Case Hospital was an email, available in Appendix 2; an undersigned, official Request for Research Authorization, available in Appendix 3; a Signed Declaration of Research Ethics, available in Appendix 4; and a Signed Research Protocol, available in Appendix 5. The Formal Authorization of Conducting Research & Approval of Access in the Case Hospital is available in Appendix 6.

(3) The material created and used for contacting the participants and organizing the GMB sessions was an email (available in Appendix 7), informing participants about the practicalities of the GMB sessions planned and the fact that some of them will be contacted privately to participate in the preliminary interviews the week before the GMB sessions.

(4) The material created and used for the preliminary interviews was a *Telephone Contact Guide*, available in Appendix 8.

(5) The material created and used for getting the participants' consent and privacy statement was the *Informed Consent & Privacy Statement Form*, available in Appendix 9 (in Appendix 9a *the Informed Consent & Privacy Statement Form* is in English and in Appendix 9b in Greek).

(6) The material created and used for inviting participants to the GMB sessions and informing them on the schedule

and content of those sessions was the *Participants' Agenda for the GMB Sessions*, available in Appendix 11.
(7) The material created and used for conducting and facilitating the GMB sessions was the PowerPoint *Presentation during GMB Session 1* (available in Appendix 27) and the PowerPoint *Presentation during GMB Session 2* (available in Appendix 28).
(8) The material created and used for conducting the disconfirmatory interviews was the *Interview Guide for the Disconfirmatory Interviews*, available in Appendix 10.
(9) The material that we created and asked from the GMB participants to fill in right before the beginning of the first GMB sessions was the *Pretest Questionnaire – Initial Understanding of Hospital Performance*, available in Appendix 12 (in Appendix 12a the *Pretest Questionnaire* is in English and in Appendix 12b in Greek).
(10) The material that we created and asked from the GMB participants to fill in and hand in before the beginning of the second GMB sessions was the *Participants' Workbook*, available in Appendix 15.
(11) The material that we created and asked from the GMB participants to fill in right after the end of the second - and last - GMB sessions was the *Posttest Questionnaire – Final Understanding of Hospital Performance*, available in Appendix 13 (in Appendix 13a the *Posttest Questionnaire* is in English and in Appendix 13b in Greek) as well as the *CICC Questionnaire – Evaluation of the GMB Sessions by the Participants*, available in Appendix 14 (in Appendix 14a the *CICC Questionnaire* is in English and in Appendix 14b in Greek).

4.3 Access

Ethics approval and special demands in terms of forms and authorisations are considered essential in healthcare research. As commonly, in our research as well, research and ethics approval required the development and submission of an "ethics protocol", i.e., a separate form devised purely for the research purposes. Such forms pay detailed attention to the various ethical issues that might arise in relation to the research and are submitted for approval to Research Ethics Committees (Denscombe, 2012, p.132).

Once we identified the case hospital (through the interest presented by the potential gatekeeper) we officially submitted a formal request to the Hospital's Board of Directors (submitted in December 2019) for permission to conduct research inside the hospital. This email is available in Appendix 2. Because of the sensitive data this research involved, we were asked to submit a formal request for research approval and ethics approval to the hospital's Research and Ethics Committee, providing them with the following additional documents, translated in Greek and undersigned by the researcher: (1) Researcher's Statement (available in Appendix 3 and Appendix 4) that the terms of personal data protection will be followed; that the names of the hospital and of the participants will not be exposed; and that the hospital will not be financially burdened by the research study; (2) University Certificate of Attendance, certifying the attendance of the researcher into a PhD position in the University of Palermo and specifying the research topic; (3) Research proposal and Ethics Protocol translated in Greek (available in Appendix 5); (4) Interview guide (available in Appendix 10). Both the Research and Ethics Committee and the Board of Directors of the hospital gave their consent to conduct the research and approved the researcher's access to the Case Hospital (Formal Authorization available in Appendix 6).

4.4 Procedure

The research was conducted over a sixteen-month period, from June 2019 until October 2020, while data collection took place over a five-month period (February-June 2020). Data analysis and drafting of the thesis report followed.

In order to identify the case hospital where the GMB sessions would be conducted, we first created an open call for participation in the research (available in Appendix 1) and sent it to around 70 different hospitals in Athens and Thessaloniki, the two biggest cities of Greece. We then identified via telephone the manager of the quality department of the case hospital, who had got the email and was interested to participate and get her department and hospital - which is a public hospital situated in Athens - involved in the research. This individual was interviewed by the researcher (face-to-face, one-to-one preliminary interview), whereas she also helped with the authorisation procedures and played a key role as *gatekeeper* (Andersen & Richardson, 1997; Vennix, 1996) during the GMB sessions. Starting from this individual, snowball sampling was used to select 10 participants for the GMB sessions in total, including at least one person from each main key-stakeholder category that our extensive stakeholder analysis identified (managers, doctors, nurses, paramedics and patients).

After the completion of the authorization procedures, preliminary interviews (skype interviews, one-to-one) were conducted with three more participants, all workers of the case-hospital. The researcher communicated via emails and telephone with the participants (see Appendix 7: Email to Participants and Appendix 8: Telephone Contact Guide), in order to organize the practicalities of the preliminary interviews and GMB sessions. The same email was used to officially invite the participants to the GMB sessions and inform them on the schedule and content of those sessions (see Appendix 11: Participants' Agenda for the GMB Sessions), as well as in order to give them instructions for filling in the questionnaires and the Consent Forms (see Appendix 9a: Informed Consent & Privacy Statement Form), and in order to hand out the material to them in the form of a pdf file. The gatekeeper helped at gathering the completed and signed documents from the participants in closed folders, and handed them in to the researcher before the GMB sessions.

A series of two GMB sessions (each of them 5-hours long) on the topic "hospital performance" were organised at the case hospital, with the participation of ten case-hospital stakeholders and with the purpose of "eliciting" their mental models and "capturing" them in a qualitative system dynamics model (causal loop diagram). We started from scratch, without using any *concept models* (Richardson, 2013), simply by asking the stakeholders to define performance, and then step by step we identified variables and links. The researcher used two different PowerPoint presentations, one in each of the two GMB sessions (see Appendix 27: PowerPoint Presentation during GMB Session 1 and Appendix 28: PowerPoint Presentation during GMB Session 2) and a sequence of scripts (as described in section 4.2) in order to both facilitate GMB sessions and help participants start modeling. During the first GMB session, the researcher was mainly concerned with the identification of insights into the participants' perceptions, with the discovery of implications of the perceived behaviour of the system, as

well as with the development of a Reference Mode[20] of behaviour and the construction of a feedback loop diagram. At the end of the first GMB session a work-in-process, "spaghetti" model was generated, which was simplified and calibrated by the researcher before the second session.

The second session was a continuation of the first one, and it started by handing out a workbook (see Appendix 15: Participants' Workbook) presenting the previous session's model, refined by the researcher, to the participants. The workbook presented the whole model at the first page, and then the model was split in smaller parts in the next pages of the workbook. The facilitator split participants into subgroups and encouraged them to work each group on one part of the model. In order to expand the model and insert policy structure in it, a list of ranked policy options was generated by the participants during the second session, based on the intervention points identified in the model. Only after the finalisation and consensus of the group on the model conceptualisation, the session focused on analysing the potential impact of external factors on the model created. Trade-offs between the short-term and the long-term effects on performance were investigated and implications and insights for policy interventions were discussed. As a final step, the policy interventions identified were presented using the DPM approach and mapping of the variables involved, so as to make plausible suggestions to managers for their future implementation. The final part of the second session was dedicated to policy evaluation during which the facilitator presented the final results of the model and explained how its behaviour changes under the effect of the different policies identified. This resulted in a list of model improvements which were taken into account by the researcher while creating the final model. The final product of the GMB sessions was the *Scoping Model of Hospital Performance*; a "divergent" version of the CLD model of the hospital performance as perceived by the GMB participant stakeholders. In Appendix 20 the evolution of the model-building during the GMB sessions is documented.

After translating in English, simplifying and refining that model to make it more "presentable", we conducted seven *disconfirmatory interviews* according to the methodology described by Andersen et al. (2012). Based on the interview guide that we created (see Appendix 10: Interview Guide for the Disconfirmatory Interviews) we conducted seven disconfirmatory interviews with stakeholders from seven other hospitals in Greece, in order to validate the model and create the "convergent" version of the model; the *Conceptual Model of Hospital performance* (including only the variables and loops which all stakeholders from all hospitals agreed upon).

Disconfirmatory interviews were composed of two different parts, as we mentioned in section 4.2. During the first part of the interview, we worked inductively with the participants, asking them open questions on four different modules: performance roles and duties; performance definition and related variables; performance mechanisms; and performance measures. During the second part, we showed to the participants the divergent model of the hospital performance model and we worked deductively with them, asking them clarifying questions on how they perceive some variables and links of the model, and encouraging them to disagree openly. We asked

[20] A Reference Mode is a graph of a variable over time. Reference Modes are used at the beginning of System Dynamics Projects in order to depict the behaviour of a key variable over time. For more information, see: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.201.8533&rep=rep1&type=pdf

them to think for every link if it "always" happens as described in the model or if it "sometimes" happens, according to their experience; if the answer was "sometimes" then we deleted the link or the variable in question. In this way, based on their agreement or disagreement on some of the causal relations and variables, we refined the divergent CLD model of hospital performance by deleting the causal relations and variables upon which the interviewees disagreed, and we derived the *Conceptual Model of Hospital Performance*. Then we simplified that model as described in chapter 8.1, and created a *Simplified Conceptual Model* used to derive the set of hypotheses, conduct our analysis and answer our research questions.

All interviews and GMB sessions were conducted in the Greek language for the participants' convenience. Thus, most of the material was originally prepared in English and was then translated into Greek. The GMB presentations and authorisation material were created only in Greek. All interviews and GMB sessions were tape-recorded in order to be used during the analysis phase. VENSIM (Ventana) software was used to facilitate modelling during the GMB sessions, and both VENSIM (Ventana) and STELLA ARCHITECT (isee systems) software were used for the model analysis and for the presentation of the results.

In the next two sections we will introduce the reader to the methods used for the design and preparation of the GMB sessions, we will report the actual process of background modeling and facilitation and the group dynamics between GMB participants will also be discussed.

4.4.1 Design, Preparation and Logistics of the GMB Sessions

As mentioned above, the research conducted at the case hospital was divided into two GMB sessions of five hours each, the first of which was held on the 26th February 2020 and the second one on the 28th February 2020. The GMB sessions were successfully organised and implemented during the last week of February 2020 - just a few weeks before the first coronavirus lockdown in Greece. This section discusses the methods used for the design, preparation and logistics of the GMB sessions.

Logistics and group composition: In total, two GMB sessions with an average duration of five hours per session were held at the conference hall of the hospital. A group of ten employees from the case hospital (one hospital manager, one doctor, five nurses-three of whom were managers of their nursing departments, one paramedic and two patients) joined each of the two sessions. We made sure that the group of participants included at least one person from each main key-stakeholder category that our extensive stakeholder analysis identified, and that among those ten people there was at least one representative of each of the four divisions of the hospital (administrative, technical, nursing and medical).

Set-up: For the preparation of the GMB sessions we used the preparation procedures and the Scripts for group model building proposed by Anderson and Richardson (1997) and by the Scriptapedia, as we mentioned in chapter 4.2. More specifically, we borrowed and used the *Preceding Scripts (Creating a Shared Vision of Modeling Project, Logistics and Room Set Up, Process Mapping, Scheduling the Day)* and the *Follow-up (Debriefing)* scripts for the sessions' preparation and set-up.

Both GMB sessions were facilitated by the researcher herself, who had the necessary expertise in facilitation and SD modelling, acquired as described in chapter 1.3 through intense coursework and facilitation of other GMB

projects of the Radboud University of Nijmegen. The sessions were divided according to Sterman's (2000) SD modelling process and designed using *scripts* (Andersen & Richardson, 1997). We decided to start from scratch our GMB sessions, and not to use a *concept model*, because it was considered important by the researcher that the group would "own" the model and that the *concept model* would not become an "anchor". A Participants' Agenda for the GMB Sessions (available in Appendix 11) was created and handed out a few days before the sessions, in order to introduce participants to the GMB sessions, let them know what to expect and inform them on the time-schedule of the sessions. Two PowerPoint presentations (available in Appendix 27 and 28), one for each of the two GMB sessions, were created and used during the GMB sessions to keep the workflow smooth, the participants focused on the task and to facilitate time management.

Process Mapping: The goals of the first GMB session were to introduce participants to the GMB work and method; to help them better understand and articulate the problem of low performance in order to define hospital performance and its Reference Mode[21] during the last decade; and to start modelling, focusing on the causes of the problem of low performance. We borrowed and used the following scripts during the session, which we adapted according to our special needs and goals: *Elephant Parable, Modeling Project Community Presentation, Hopes and Fears, Graphs Over Time, Variable Elicitation, Nominal Group Technique, Creating Causal Loop Diagram from Variable List, Initiating and Elaborating a "Causal Loop Diagram"*[22]. Those scripts helped the group gain insight into the other participants' mental models and generate the Reference Mode of behaviour.

The goals of the second GMB session were to continue modelling, focusing on the symptoms, effects and consequences of low hospital performance, and finalise the model by "closing the loops"; to identify intervention points in the model and use them to develop, discuss and prioritise alternative policies that would foster hospital performance; and to create an action plan of necessary next steps and follow up. We borrowed and used the following scripts during the session, which we adapted according to our special needs and goals: *Nominal Group Technique, Initial Policy Options, Next Steps and Closing, Key Take-Away*[23]. Those scripts helped the group discover feedback loops through causal connections; create step-by-step a causal loop diagram of hospital performance; and use it to formulate alternative policies to foster performance in their hospital.

4.4.2 Facilitation & Background Modeling during the GMB Sessions

GMB is a combination of System Dynamics (SD) and Facilitation. The SD approach is a set of principles that are used to tackle complex problems in systems with dynamic structure, using both qualitative and quantitative modelling principles (Morecroft & Sterman, 1994) to conceptualize the underlying feedback loop structure of the system at hand in order to discover the repercussions of potential decisions over time (Sterman, 2000). The facilitation part of GMB is focused on eliciting information, exploring causes of action and evaluating policies between stakeholders. The main purpose of using facilitation in GMB sessions is to clarify the problem of low

[21] A Reference Mode is a graph of a variable over time. Reference Modes are used at the beginning of System Dynamics Projects in order to depict the behaviour of a key variable over time. For more information, see: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.201.8533&rep=rep1&type=pdf

[22] See: https://en.wikibooks.org/wiki/Scriptapedia

[23] See: https://en.wikibooks.org/wiki/Scriptapedia

hospital performance by providing a systemic view; foster understanding and consensus among participants through the alignment of participants' mental models; and create commitment to the results of the project. The modellers of GMB rely on information contained within the mental models of the participant stakeholders, which represents the way someone perceives the reality (Huz et al., 1997).

The researcher's goal as a facilitator in the GMB sessions was to help participant stakeholders understand and look from different perspectives the multifaceted problem of low hospital performance; help them listen and learn from each other's experience and expertise; and combine the different perspectives in one shared model, in order to find a common ground for policy alternatives. Right at the beginning of the first GMB session, and given the sensitivity of the topic, the facilitator intended to inspire intimacy and a positive atmosphere by setting ground rules that aimed to create a feeling of safety and trust among the group, and second by carrying out warm-up exercises where participants could express their personal history in the hospital and their feelings about their work. Moreover, the facilitator made use of various facilitation techniques in the GMB sessions to ensure quality of the process. These included: use of nominal group technique to stimulate group individuality; direct questions towards reserved participants, in order to help them open-up; use of a structured agenda and scripts; and specific time for reflection on the process within every session. During the sessions, a second person was hired by the researcher-facilitator to be present in the room and help her with technical issues (i.e., changing slides, making sure that the projector and computer works, etc) and practicalities (i.e., preparing food and drinks during the breaks), so that the facilitator could be focused only on the GMB process and on ensuring constructive interaction between participants.

Both GMB sessions were mainly focused on eliciting qualitative information. Thus, part of the modelling was performed in between the sessions to save time for participants and keep the flow of the sessions. The improvements were based on information shared by the participants during the session, and were introduced and thoroughly explained to the participants after the breaks or at the beginning of the second session. It is important to address the fact that model building is an iterative process which often requires to take a step back and reconsider some assumptions. In between sessions (i.e., the day after the first session, and a day before the beginning of the second session) the facilitator (researcher) provided participants with workbooks (available in Appendix 15) which contained an overview of the refined model of the previous session and some parts of the model that needed further refinement by participants.

As part of the process, the researcher also took notes on group dynamics. These notes focused on non-verbal communication and they helped us understand the emotional life of the group (Phillips & Phillips, 1993), yielding insights on the distribution of power and conflict. Indeed, one of the most important findings we managed to observe was the *interplay between the individual and the group* (Phillips & Phillips, 1993) as the group atmosphere changed when certain group members left the group for a while. To our knowledge, there was no conflict that escalated beyond task conflict (Cronin & Bezrukova, 2019). In fact, there was overall a positive atmosphere, often accompanied with jokes and laughter, which boosted group work and sharing. If we take the framework of Belbin's (2010) team roles, we can say that the team abounded with team players, monitor evaluators and specialists; while it lacked completers, finishers, shapers and implementers.

Right from the beginning it was clear that the participants differed in their tendency to take leadership in the discussion. These differences were visible along several aspects such as: their expertise in the topic; how often they spoke; how long they spoke for; whether or not they were looking for confirmation from others. There are multiple possible explanations. One might be the form of hierarchy. As one might expect from a public, bureaucratic organisation (Mintzberg, 1979) the position of each participant in the organisation's hierarchical pyramid seemed to determine to some extent the tendency to take the lead in the discussion or to defer to the backseat. Also, individual characteristics like tendency to assertiveness might have played a role in the process. Although there were documented differences in the leadership roles in the sessions, the participants all indicated that their mental models were reflected in the model and that they felt satisfied with the facilitation and the process.

4.5 Data Analysis

Scoping Review of the International Literature of Performance Management in the Health Sector: A Scoping Review of the international literature of performance management in the public healthcare sector around the negative consequences of performance management systems was initially conducted. This extended review was conducted in order to present the state of the art in the field and point where the literature discussion is at the moment; to identify and highlight gaps in the literature; and to explain the need for the research about to be conducted. This review concluded that researchers all around the globe have not yet come to an end as regards the supposed positive impact of traditional PM policies and reforms in healthcare and that some research has shown that, paradoxically, PM policies do not always lead to improved performance of hospital services and sometimes even cause unintended consequences and deterioration of health services quality.

Critical Review of the Literature of the Greek Healthcare Reform: After that, a Critical Review of the literature of the Greek healthcare reform (articles published between 2009-2020) was undertaken, focusing on the outcomes, effects and consequences of the healthcare reform for public hospitals' performance in Greece. This review was conducted in order to identify observations and practical implications of the Greek healthcare reform, as reported by other researchers; to examine their relevance with hospital performance; and to compare different perspectives and views. More specifically, we critically reviewed, collected and listed the new performance management policies adopted by public hospitals after the reform, as well as the negative consequences of the reform as regards both the "hard" variables (describing structure and process of the delivery of care, such as personnel, equipment and management systems) and the "soft" variables (describing outputs and outcomes of the reform, such as patient satisfaction and mortality rates).

All those unintended consequences that our extensive literature review identified were summarised and listed accordingly. Moreover, the information gathered (i.e., the negative outputs and outcomes listed) were used in order to create the Reference Mode of our case-study. This review clearly showed that the PM policies introduced in Greek public hospitals after the reform had a negative impact on many aspects of hospital performance, but the mechanisms that led to this deterioration of performance are not clear. Furthermore, this critical review concluded that better understanding of the mechanisms that led to those unintended negative effects

in the case of Greece is crucial for the design of better healthcare policies in the future, and for facilitating hospital performance in the long-term.

Stakeholder Analysis: Our stakeholder analysis was not simply based on a power-interest matrix, as in most research involving stakeholders. Instead, it was based on an extensive framework that we created taking into account our reasons for involving stakeholders one by one; connecting those reasons with the different *uses of stakeholders' involvement* (i.e., normative, substantive, instrumental, transformative use) according to Király and Miskolczi (2019); and then connecting the different methods of involving stakeholders identified in the literature with the appropriate *levels of Stakeholders' Involvement* (Green & Hunton-Clarke, 2003) for each use. This analysis is analytically presented and explained in chapters 3.5.3. and 3.5.4..

Narrative Analysis of Preliminary Interviews and Documents: The preliminary interviews and documents were narratively analysed with open codes and axial codes according to Turner et al.'s (2014) approach. The narrative analysis of those open-access and closed-access documents which regarded the Ministry's and the hospital's performance objectives were used in order to create the *Policy Model of Hospital Performance*, while some other findings from the critical literature review were used in order to validate the *Conceptual Model of Hospital Performance* as well as the *Policy Model of Hospital Performance*.

Qualitative SD Analysis (Causal Loop Diagram) of the *Conceptual Model of Hospital Performance* created during the GMB sessions: For the model building and analysis we used mainly qualitative system dynamics modeling or *Causal Loop Diagrams* (Forrester, 1961; Richardson & Pugh,1981; Sterman, 1989, 2000), and we followed the six stages research approach identified by Martinez-Moyano and Richardson (2013) as described in chapters 3.5.1 and 3.5.2.

4.6 Conclusion

Mixed methods were used to facilitate our approach, combining primary qualitative data from two Group Model Building (GMB) sessions, four open, unstructured preliminary interviews and seven semi-structured, disconfirmatory interviews, with secondary qualitative data from a scoping and from a critical literature review and from official, open-access, online text-documents and closed-access, internal text-documents of the hospital's interdepartmental communication.

An open call for participation in the research was sent by email to around 70 different hospitals in Athens and Thessaloniki, and the gatekeeper was identified. Starting from the gatekeeper, snowball sampling was used to select 10 participants for the GMB sessions, including at least one person from each main key-stakeholder category that our extensive stakeholder analysis identified (managers, doctors, nurses, paramedics and patients), all of whom were employees or patients of the case hospital. Four of them were also interviewed before the GMB sessions (face-to-face, one-to-one preliminary interviews).

Two GMB sessions (5-hours long each) on the topic "hospital performance" were organised at the case hospital a few weeks before the coronavirus total lockdown in Greece, with the participation of the ten stakeholders and with the purpose of "eliciting" their mental models and "capturing" them in a qualitative system dynamics

model (causal loop diagram). We started from scratch, simply by asking the stakeholders to define performance, and then step by step identified variables and links. As commonly, in our research as well, research and ethics approval required the development and submission of an "ethics protocol", i.e., a separate form devised purely for the research purposes.

Because of the coronavirus emergency which prohibited further visits to the case-hospital or to other hospitals, and inhibited the possibility to continue the snowball sampling, we used convenient sampling in order to identify seven more participants for the disconfirmatory interviews. Those seven individuals were again public hospital stakeholders who fall into the five main key-stakeholder categories and each one of them works or has been hospitalized in a different public hospital. Thus, we had participant stakeholders from seven different public hospitals of different regions and cities of Greece (Heraklion Crete, Sitia, Thessaloniki, Athens, Giannena, Kavala, Kalamata) which strengthens the validity of our findings.

The data analysis included a Scoping Review of the International Literature of Performance Management in the Health Sector; a Critical Review of the Literature on the Greek Healthcare Reform; a Stakeholder Analysis; a Narrative Analysis of Preliminary Interviews and Documents; and a Qualitative SD Analysis (Causal Loop Diagram) of the *Conceptual Model of Hospital Performance* created during the GMB sessions. The disconfirmatory interviews mostly had the purpose of validating and increasing confidence in the model, by using stakeholders from different hospitals to "disconfirm" variables or links of the model created in the case hospital.

CHAPTER 5 - JUSTIFICATION OF THE CHOICE OF METHODS

In chapter 5 we discuss the main reasons for choosing our research approach, methodologies and methods, and the methodological decisions in conducting our research study and in combining those methodologies to facilitate our research purposes. More specifically, we discuss the suitability of the methodological approach and research strategy to the research purpose; the feasibility of the chosen methods and their implementation; some ethical considerations; the rigour of the study; and, finally, some limitations of the study stemming from the research methodology chosen.

5.1 Suitability of the Methodological Approach & Research Strategy to the Research Purpose

As hospital performance is a quite broad and rather vague concept, for which existing definitions differ widely according to different stakeholder groups, we needed an approach that can give us the systemic view of the public hospital and of the factors that affect its performance, as perceived by the various stakeholders. In accordance to the research traditions of *Stakeholder's Theory* (Bryson, 2004; De Gooyert et al., 2017; Freeman, 1984; Mitchell et al., 1997;) and *Participation* (King & Kraemer, 1993; Király & Miskolczi, 2019; Rouwette, 2016; Schweiger et al., 2018), we found that stakeholders' perceptions and involvement is crucial for our research objective of defining hospital performance, on the one hand, and facilitating change, on the other hand.

We used a participatory technique known as *Group Model Building (GMB)* indicated for facilitating collective learning in projects with a systemic scope (De Gooyert, 2016, 2018; De Gooyert et al., 2019; Richardson & Andersen, 1995; Vennix, 1996) and a *dynamic* problem definition. Our problem of low hospital performance is indeed dynamic, as performance is in itself a dynamic concept which should be defined in a broader sense and analysed as a component of the healthcare system (De Gooyert et al., 2019; Meadows, 2008; Sterman, 1994). Furthermore, it is true that in the public healthcare sector a *dynamic* approach (Bianchi, 2016; Bivona, 2013; De Gooyert, 2018; Sterman, 2000) would be needed in order to easily grasp dynamics due to feedback processes (i.e., changes on a variable caused by changes on itself earlier in time), delays and non-linearities endogenous in the healthcare system which co-determine performance dynamics. Thus, adopting a *systemic* view (De Gooyert et al., 2019; Meadows, 2008; Sterman, 1994) was more appropriate for our purposes. Especially in the case of Greece, the public healthcare system is characterised by multiple decision-making centres, overregulation, extensive political party's penetration in public management as well as truculent and irrational influences by labor unions (Economou, 2010; Minogiannis, 2012; Theodorakioglou & Tsiotra, 2000), which are only some of the factors that comprise a complex, non-linear, multi-loop feedback system of the public hospital. Such a system makes it hard to frame and analyse its long-term dynamic outcomes using traditional *static* approaches of performance management (Cosenz & Noto, 2016; Linard et al., 2002).

Recent research shows that the dynamics of complex systems could be adequately framed and analysed by the so-called *Dynamic Performance Management (DPM)* approach (Bianchi, 2010, 2012, 2015, 2016; Bianchi et al., 1998, 2013; Bivona, 2013; Bivona & Montemaggiore, 2010; Cosenz & Noto, 2016). DPM is a combination

of traditional Performance Management in the public sector (Bouckaert & Halligan, 2007; Bouckaert & Peters, 2002; Elg et al., 2013; Karra & Papadopoulos, 2005; OECD, 2007) and the *System Dynamics (SD)* methodology developed during the 1950s by Jay Wright Forrester, which provides a systemic perspective and a powerful set of tools for conceptualising and analysing complex systems for management and change (Forrester, 1958, 1961; Richardson & Pugh, 1981; Sterman, 1989, 2000). The DPM approach will facilitate a systemic view of the mechanisms that lead to enhanced performance in the public healthcare sector, and will enable us to detect the causal links between strategic resources, outputs (short-term results) and outcomes (long-term impact on performance). It has already been successfully used to support decision-making processes in organisational, institutional and governmental settings (Davidsen, 1996; Bianchi et al., 2017), while it also permits engaging stakeholders both from the internal and the external environment.

Adopting a systemic (Meadows, 2008), participatory (Kiraly & Miskolczi, 2019), inductive (Luna-Reyes & Anderson, 2003) and dynamic (Bianchi, 2016) approach will enable us apply our findings to the Greek paradigm and investigate whether and -if so- how does the Greek Healthcare Reform meet its underlying purpose of leading to better performance and quality of healthcare services in public hospitals.

Moreover, we adopted the *Grounded Theory Building Strategy* (De Gooyert, 2016, 2018), which uses iteratively existing theory and case qualitative data for model building to make a theoretical contribution with system dynamics, and which allowed us combine the longitudinal with the cross-sectional data and the exploratory with the explanatory element in our research. More specifically, it allowed us to combine the longitudinal time frame of our literature review, which followed the historical development of public hospital performance in Greece over the last ten years (2009-2020), with the present-focused, cross-sectional, case-based, field data gathered from documents and stakeholders of a Greek public hospital, to plan future policies. Furthermore, it allowed us to combine the exploratory and explanatory element in our research, trying simultaneously to explain why the documented, counterintuitive negative outcomes on performance after the Greek healthcare reform emerged and what their underlying causes are, and build on a well-developed body of knowledge as well as field, case-based data to shed light on how hospital performance is perceived and what mechanisms drive its trend (dynamic behaviour).

5.2 Feasibility of the Chosen Methods & Research Implementation

5.2.1 Risk Assessment

Because of the special nature of the research (involving closed-access documents, sensitive patient data and health workers as participants) research approvals and ethics had to be carefully planned in advance. More specifically, the researcher had to investigate and get informed on the legal authorization procedures for research approval and ethics approval; address ethical issues and prepare an ethical statement; prepare an ethics protocol; prepare the formal request for permission to conduct research inside a Greek hospital, addressing the Hospital's Board of Directors; prepare the formal request for research approval and ethics approval, addressing the hospital's Research and Ethics Committee.

Furthermore, before the research implementation the researcher had to undertake a stakeholder analysis to identify which stakeholder groups should participate in each stage of the research; develop and send out the "call for participants" in order to identify the Case Hospital; submit the formal request for a permission to conduct research to the Hospital's Board of Directors; submit the formal request for research approval and Ethics approval to the hospital's Research and Ethics Committee; prepare and submit additional documentation to the Research and Ethics Committee of the hospital; receive research approval and Ethics approval; create the Interview guide; create the GMB presentation & agenda.

Those procedures, together with the implementation of the research involving interviews and GMB sessions with many stakeholders, were time-consuming and, of course, could be easily altered, delayed or cancelled. Thus, a lot of proactiveness and planning ahead was necessary by the researcher in order to successfully complete the research, respecting all ethical and practical issues that arose. The extensive risk assessment that we undertook, as well as the measures and precautions undertaken based on this risk assessment for the protection of the participants in terms of potential harm, voluntary participation, informed consent, privacy, identity, confidentiality, etc, are analytically presented and analysed in Appendix 26.

5.2.2 Dealing with the Coronavirus Emergency

Our careful risk assessment and all the precautions we took (available in Appendix 26) materialised as the coronavirus crisis burst out during our research implementation and threatened to defile all our efforts; get the GMB sessions cancelled; and delay indefinitely our research implementation. The relationship which the researcher had already built with the gatekeeper and with the participants, along with the legal bounds that she invoked (as all the authorisations were already in place) and the dexterity and perseverance with which he handled the issues and challenges that arose, was vital for the successful implementation of the research.

The GMB sessions were finally conducted as planned at the case hospital, just a few weeks before the first coronavirus total lockdown of March 2020 in Greece. Follow up of the GMB participants, however, became difficult, because of the coronavirus crisis they had to deal with, the hospital overload and the ongoing lockdown. Thus, the disconfirmatory interviews, which the researcher was planning to conduct with health workers from the case-hospital, could no longer be conducted at the case hospital because of the coronavirus emergency which prohibited further visits to the case-hospital or to other hospitals and inhibited the possibility to continue the snowball sampling.

Thus, another strategy was deployed by the researcher. She used convenient sampling in order to identify seven more participants for the disconfirmatory interviews, and conducted the interviews online and remotely through the Skype platform. Those seven individuals were again public hospital stakeholders who fell into the five main key-stakeholder categories (hospital managers, doctors, nurses, paramedics and patients) and each one of them works or has been hospitalized in a different public hospital. Thus, we had participant stakeholders from seven different public hospitals of different regions and cities of Greece (Heraklion Crete, Sitia, Thessaloniki, Athens, Giannena, Kavala, Kalamata) which is a fact that strengthened the validity of our findings. In this way, the researcher used the challenges that arose in a creative way, in a way that further strengthened the validity of

our research data and findings.

5.3 Ethical Considerations & Statement of Research Ethics

Although the responsibility for conducting research in an ethical manner always rests with the individual researcher, various codes of research ethics are available and provide guidelines that researchers can use to assure themselves that the design and conduct of their research meet appropriate standards (Denscombe, 2012, p.135). Thus, in order to assure that our ethical statement is being met throughout the research design, planning and implementation, this research has been conducted with respect to: the *Academy of Management (AOM) Code of Ethics* (2006), the *System Dynamics Society Code of Conduct* (V4.2 28/01/19) and the *General Data Protection Regulation* (GDPR) of the Data Protection Act 2018 (DPA 2018). Both the *Academy of Management Code of Ethics* and the *System Dynamics Society Code of Conduct* resemble the Nuremberg Code and the Declaration of Helsinki, although they give emphasis to different topics each. Also, as most Ethics Codes, they both share the basic principles of research ethics upon which we based our ethical statement, presented in the next paragraph.

Our ethical statement reflects the three basic principles of research ethics, namely: no harm to participants; voluntary consent; scientific integrity (Denscombe, 2012, pp.128-130), and is based on the five fundamental principles of the Ethics Assessment Committee Law and Management (EACLM) of the Radboud University of Nijmegen, namely: reflexivity and awareness; transparency; human dignity; protection of basic rights; and a fair distribution of the benefits and burdens of research[24]. Following those fundamental principles, as well as the guidelines for creating an ethical statement given by Denscombe (2012, p.133), the researcher and PhD candidate hereby states that:

(1) She is fully aware of the ethical aspects of her research; willing to plan and conduct research in an ethically sound and correct way; and fully responsible to maintain appropriate standards of scientific and professional integrity.

(2) She is completely open, honest, transparent and explicit regarding all the methodological decisions and choices she made, as well as regarding the research implementation, the data collection, analysis and dissemination.

(3) She took measures to prevent that any moral or professional harm is done to participants, and to ensure that participation in the research study is voluntary and based on free and informed consent of the participants.

(4) She fully respected privacy and confidentiality throughout the research, in order to ensure that all the participants' and the organisation's rights, interests and anonymity of identities and of the case hospital are protected.

(5) She took measures to ensure impartiality and fair distribution of benefits and burdens of participation in the research.

This research study involves primary data collection from human participants (using interviews and GMB sessions) and from organizations (using official documents produced by the hospital, the ministry of health and other public institutions) and, subsequently, this research belongs to the research types which require ethical approval (Denscombe, 2012, p.122). Furthermore, as our research is conducted inside the healthcare discipline,

[24] See: https://www.ru.nl/law/research/ethics-assessment-commttee/ethics-self-assessment-criteria/

takes place inside a public hospital and involves participants' and patients' personal data, there is an extremely high sensitivity to research ethics, involving more than the minimal risks. According to Denscombe (2012, p.123) there are some kinds of research that require special care in terms of research ethics, and he identifies several kinds of research and information gathered, which are regarded as particularly sensitive. Our study, in fact, requires special care as it involves access to two of those sensitive research types that he identifies:

(1) Research involving Personal Data & Confidential Information (access to records of personal or sensitive information concerning identifiable individuals). In fact, our research involves personal data of participant stakeholders.

(2) Research involving groups where permission of a gatekeeper is required for initial access to members (i.e. where access to research participants is not possible without the permission of another person with appropriate authority). In fact, our research involves *Group Model Building* sessions and interviews with hospital managers, workers and patients, regarding issues they face at their workplace. Thus, the permission of the hospital's Board of Directors, and the consent of the Hospital's CEO as a gatekeeper was essential to guarantee access to those individuals and to establish commitment to participate in the research project by them.

According to Denscombe (2012, p.124) apart from the data collection - which in our case gives rise to ethical concerns - there can also be ethical issues regarding the subject matter involved, the purpose of doing the research, and the dissemination and use of the findings. In our case, only the dissemination and use of the findings is somehow relevant, as the name of the hospital and the names of the participants could be exposed during the writing of the thesis and the dissemination of the results. Following Denscombe (2012, pp.128-130), an informal risk assessment was undertaken by the researcher in order to identify and consider during the research design phase any potential harm for the participants and the participating organisation resulting from the research. This informal risk assessment was conducted by means of thinking about a whole range of questions and "What if" scenarios in connection with the research proposal and design. Our extensive risk assessment, as well as the measures and precautions undertaken based on this risk assessment for the protection of the participants in terms of potential harm, voluntary participation, informed consent, privacy, identity, confidentiality, etc, are analytically presented and analysed in Appendix 26.

Potential risks were found to arise mainly from the nature of the data collected (personal data). Thus, the need for assuring security of collected data, and the need for keeping anonymity when disseminating findings was found as crucial. Furthermore, within the additional documents submitted to the Hospital's Research and Ethics Committee was a statement signed by the researcher stating that the terms of personal data protection will be followed and that the names of the hospital and of the participants will not be exposed while reporting the findings from the research, neither for the writing of the thesis nor for any publications. Those documents were made available to all the participants as well. The researcher developed a plan for minimising those risks and guarantee anonymity, involving actions such as: replacing the name of the hospital by "the hospital" or "the case hospital" in all the transcripts and documents, and informing the research proposal, the interview, the telephone guide and all the materials accordingly, as well as by not revealing the names of the participants in any way.

Consent was obtained directly from the potential participants, in physical form. Free and informed consent

was required, and a consent form was created and used. Regarding Data Protection[25], the *General Data Protection Regulation (GDPR)* of the *Data Protection Act 2018 (DPA 2018)* contains all the general rules that the data processing must meet in Europe. The researcher followed all those rules and guidelines during the research study, in order to assure that data security will be safeguarded, and that the data protection and data privacy are secured in accordance with the European laws and standards.

Finally, once we identified the case hospital through the interest presented by the potential gatekeeper, we first officially submitted a formal request to the Hospital's Board of Directors for permission to conduct research inside the hospital. Because of the sensitive data that the research involved, we were asked to submit a formal request for research approval and ethics approval to the hospital's Research and Ethics Committee, providing them with additional documents. Thus, the privacy rules of the hospital were fully respected.

5.4 Rigour of the Study

According to Lincoln and Guba (1985), reliability of a research study is critical for determining its value. Reliability, however, in a qualitative research study following the constructivism paradigm - such as the one that we conducted - takes the form of confidence to the model and trustworthiness to the research findings, because objectivity cannot be accomplished in such research paradigms (Cypress, 2017; Sterman, 2002). Instead, our qualitative analysis is valuable in its subjectivity, as participants are creating a model of shared or "collective" reality and are actively constructing meaning given to the performance indicators of the shared model. Trustworthiness in such a research context requires the creation of: Credibility (i.e., trust in the 'truth' of the findings and observations); Transferability (i.e., proving that the findings are applicable in other situations as well); Dependability (i.e., proving that the findings are consistent and could be replicated); and Confirmability (i.e., proving that there is an adequate level of neutrality in the data gathered).

Furthermore, one of the most important elements of any model-building project is establishing model validity. It is important to note that this process is not in a search for "hard" validation. There are two reasons for this. One is that no model is completely valid because all models are simplifications of reality and thus fail at representing reality in its riches (Sterman, 2002). For example, models created with the GMB approach are merely a representation of the mental models of the project participants (Vennix, 1996). Second, a model should only be considered valid or not in relation to its purpose (Barlas, 1996). Hence, the validity of the model is dependent on the purpose of the model, so that a model is valid if it is useful.

Following Denscombe (2012, pp.128-130), an informal risk assessment was undertaken by the researcher at the initial stages of the research design, in order to ensure scientific integrity throughout the whole research project, following Denscombe (2012, pp.128-130). Some of the questions that this risk assessment tried to answer were: What research experience and technical skill does the researcher have, and is this suitable for the nature of the research envisaged in the proposal? What measures will be in place to support impartiality? Are there any

[25] See: https://www.ru.nl/privacy/english/ and https://eugdpr.org/

vested interests in the findings or any other conflicts of interest? How will open dealings with participants and colleagues be encouraged? What avenues of communication will be open between researcher and participants? How will participants be able to check the credentials of the researcher? Are there any matters relating to intellectual property or ownership of the data that are likely to arise and, if so, how will these be dealt with? Based on this risk assessment (available in Appendix 26), the researcher undertook a number of measures and precautions to minimise the risk and assure research quality and scientific integrity. Following Denscombe (2012, pp.128-130), those measures can be categorised as follows: (1) Measures for Ensuring impartiality; (2) Measures for Being honest and open; and (3) Measures for Upholding research integrity.

Credibility and Internal Validity (i.e., trust in the 'truth' of the findings and observations) in our study was ensured by means of:

(1) *Prolonged Engagement*[26] and *Persistent Observation*[27]. The case of a Greek public hospital was chosen for conducting the research study using the DPM approach. This is all very relevant to the researcher's background and knowledge, as the researcher and PhD candidate has specific education in management (Degree in Business Administration) and in hospital management (Master's Degree in Health Services Management) and has worked for two full years as a Managing Director of a Greek public hospital. Thus, she is very familiar with the theory but also with the practical aspects, the deficits, the procedures and the laws that apply to the Greek health system and the Greek hospitals. Her network and status as a former hospital director also helped her at gaining access and trust by the hospital board who authorised her to conduct her research in the hospital. She spent a lot of time talking "off the record" with the gatekeeper, the hospital manager and some of the participants, both through skype and in the field, and conducted preliminary interviews with four persons, which helped the researcher develop relationships, mutual trust and "rapport" with the participants. For all those reasons *Prolonged Engagement* was ensured. *Persistent Observation* of our findings was ensured mainly by the rich, detailed qualitative data and the *Thick Descriptions*[28] of all the model variables and links (see Appendix 24) and model loops (see chapter 8).

(2) *Triangulation*[29], by using many different data sources (including interviews, GMB sessions, documents and the literature) for "cross-checking" and ensuring the robustness and internal validity of our findings. For example, the narrative analysis of the open-access and the closed-access documents which regarded the Ministry's and the hospital's performance objectives were used in order to create the *Policy Model of Hospital*

[26] Prolonged engagement refers to spending sufficient time in the field to learn or understand the culture, social setting, or phenomenon of interest. This involves spending adequate time observing various aspects of a setting, speaking with a range of people, and developing relationships and rapport with members of the culture. Development of rapport and trust facilitates understanding and co-construction of meaning between researcher and members of a setting. For more details, see: http://www.qualres.org/HomeProl-3690.html

[27] The purpose of persistent observation is to identify those characteristics and elements in the situation that are most relevant to the problem or issue being pursued and focusing on them in detail. If prolonged engagement provides scope, persistent observation provides depth. For more details, see: http://www.qualres.org/HomePers-3691.html

[28] Thick description is described by Lincoln and Guba (1985) as a way of achieving a type of external validity. By describing a phenomenon in sufficient detail one can begin to evaluate the extent to which the conclusions drawn are transferable to other times, settings, situations, and people. For more details, see: http://www.qualres.org/HomeThic-3697.html

[29] Triangulation involves using multiple data sources in an investigation to produce understanding. Rather than seeing triangulation as a method for validation or verification, qualitative researchers generally use this technique to ensure that an account is rich, robust, comprehensive and well-developed. For more details, see: http://www.qualres.org/HomeTria-3692.html

Performance, and some of our findings from the critical literature review were used in order to validate the *Conceptual* and the *Policy Model of Hospital Performance.*

(3) *Negative case analysis*[30] and *Member-checking*[31]. First, the *Negative case analysis* was applied in our research study by conducting disconfirmatory interviews with hospital stakeholders from other hospitals, in order to validate and increase confidence in the model created by the stakeholders of the case hospital during the GMB sessions. During the disconfirmatory interviews, interviewees were "disconfirming" variables and links of the model created in the case hospital, and we deleting from the model the causal relations and/ or variables upon which the external stakeholders (interviewees) disagreed. *Member-checking* was applied in our research by comparing the initial understanding of hospital performance of the case-hospital participants (deducted by the findings from the preliminary interviews and the pretests conducted before the GMB sessions) with their final understanding of hospital performance (deducted by the findings from the CICC questionnaire and the posttests, conducted right after the GMB sessions).

Transferability and external validity (i.e., proving that the findings are applicable in other situations as well) of our research findings was ensured mainly by the rich, detailed qualitative data and the *Thick Descriptions*[32] of all the model variables and links (available in Appendix 24) and model loops (available in chapter 8) which allow the readers interpret the results and see if they can be generalized to other contexts. Although generalizability is not the purpose of a qualitative analysis such as ours, we wanted our model to be "universal" for the Greek healthcare context and readily usable by other hospitals and policy-makers in Greece. For this reason, after building the model of hospital performance with the GMB participant stakeholders of the case hospital, we chose to conduct disconfirmatory interviews with seven different stakeholders from seven public hospitals of different regions and cities of Greece (Heraklion Crete, Sitia, Thessaloniki, Athens, Giannena, Kavala, Kalamata). Those individuals were again public hospital stakeholders who fall into the five main key-stakeholder categories (hospital managers, doctors, nurses, paramedics and patients) and each one of them works or has been hospitalized in a different public hospital. During those interviews, we refined the CLD model of hospital performance according to the interviewees's views, by deleting the causal relations and variables upon which the interviewees disagreed. In this way, we strengthened the external validity of our model and findings, and created a "convergent" and more "universal" version of the *Conceptual Model of Hospital Performance*, including only the variables and loops which all stakeholders from all hospitals agreed upon and found relevant in their cases as well. Finally, we made sure that all the variables and links of our model are documented in the international and/ or the Greek literature

[30] Negative Case Analysis is a process for refining an analysis until it can explain or account for a majority of cases. It may be used to revise, broaden or confirm the patterns emerging from data analysis and involves searching for and discussing elements of the data that do not support or appear to contradict patterns or explanations that are emerging from the data analysis. For more details, see: http://www.qualres.org/HomeNega-3694.html

[31] Member Checks is when data, analytic categories, interpretations and conclusions are tested with members of those groups from whom the data were originally obtained. This can be done both formally and informally as opportunities for member checks may arise during the normal course of observation and conversation. Typically, member checking is viewed as a technique for establishing to the validity of an account. Lincoln and Guba posit that this is the most crucial technique for establishing credibility. For more details, see: http://www.qualres.org/HomeMemb-3696.html

[32] Thick description is described by Lincoln and Guba (1985) as a way of achieving a type of external validity. By describing a phenomenon in sufficient detail one can begin to evaluate the extent to which the conclusions drawn are transferable to other times, settings, situations, and people. For more details, see: http://www.qualres.org/HomeThic-3697.html

(each variable and link is documented in at least one published academic paper), which is a further sign of transferability and external validity.

Dependability (i.e., proving that the findings are consistent and could be replicated) is ensured by the explicit descriptions of the research design and the research methods selected and used, along with the fact that the researcher is being open, honest, transparent and explicit in the present research dissertation regarding all the methodological decisions and choices she made, as well as regarding the research implementation, the data collection, analysis and dissemination. All those are facts of a good research practice and ensure that scientific integrity is being preserved throughout the research implementation. Furthermore, our explicit documentation of all the procedures as well as of the material that we created and used during the research (available in the Appendixes of the present thesis) are additional elements that strengthen the dependability of our findings.

Finally, Confirmability (i.e., proving that there is an adequate level of neutrality in the data gathered) was achieved by a number of measures we undertook following Denscombe (2012, p.118). First of all, the researcher's skills are a major aspect to consider when it comes to research quality, integrity and ethics, as those skills have a major impact on the quality of the data gathering procedures and, finally, on the quality of the data gathered. Such necessary skills that the researcher possesses included qualifications and professional skills which helped her at gaining access to the case hospital and the participants and at having the kind of insight about the situation that was crucial for the success of the project.

One other major aspect to consider is the relevance of the researchers' background in respect to the research objectives and setting, and the capabilities and skills of the researcher to conduct qualitative research in general, and System Dynamics research in particular. During her two Master Degrees, the researcher conducted two different qualitative research studies for her two Masters' Theses, and had substantial lessons in qualitative and quantitative research methods as well. Furthermore, during the first two years of her Phd, the researcher focused on learning the System Dynamics methodology and the Group Model Building technique by taking part into intense coursework abroad in the Universities where the methodology is taught. More specifically, she spent one full semester in the University of Bergen, Norway, learning the System Dynamics methodology and two full semesters in the Radboud University of Nijmegen (The Netherlands), learning the Group Model Building technique and reviewing her research methodology by following specific courses on qualitative research methods. This led to a mastery of the methods and procedures she would have to use during the data collection (Group Model Building, interviews) and data analysis (System Dynamics Modeling) of her research. All those are facts that prove that the Interviews and the GMB sessions were conducted in the best possible manner, and are strengthening the confirmability of our study.

Moreover, the researcher cooperated with the gatekeeper during the selection of participants for the interviews and the GMB sessions in order to ensure that the participant stakeholders who would be selected had already cooperation and relationships between them well-established, and that they share some kind of minimum commitment to fostering performance in their departments. This would prevent from involving participants with hidden agendas that would potentially create conflicts of interest during the GMB sessions. This could lead to deliberation and manipulation of the data produced by some of the participants during the interviews and/or the

GMB session, which would finally lead to biased or falsified research results. Furthermore, the informed consent was a prerequisite for all participants, ensuring their free will to participate, as well as that no pressure had been posed on them by their managers, for example. The fact that anonymity was ensured helped them at being honest and open during the interviews. Finally, the conduct of the disconfirmatory interviews and the fact that all GMB sessions were tape-recorded are also facts that reveal that the conclusions of the research study are influenced only by the participants and are not biased by the researcher's interests.

5.5 Limitations of the Research Methodology

Apart from the usual limitations of qualitative research methods, including the lack of objectivity and generalizability (Luna-Reyes & Andersen, 2003), further limitations of this study lie in the fact that our project only led to the development of a qualitative, CLD model, due to the time constraints and the limited scope of this research study. Future research should focus on transforming the CLD (qualitative SD) model that we produced into a Stock-and-Flow (quantitative SD) model, to be used for experimentation and verification of our policy recommendations through simulation.

Furthermore, the fact that the researcher cooperated with the gatekeeper for the selection of the participants and the use of the snowballing technique is simultaneously a benefit and a drawback for our research design. On the one hand, it benefited our research because in this way we ensured that the participant stakeholders who were selected had already well-established cooperation and relationships between them, and shared some kind of minimum commitment to fostering performance in their departments. Thus, it prevented us from involving participants with hidden agendas or conflicts of interest, which could potentially lead to deliberation and manipulation of the data for political reasons during the interviews and/or the GMB session, and finally lead to biased or falsified research results. On the other hand, however, it may have led us exclude from our sample some voices that might have been useful.

Moreover, due to the time constraints, the covid-emergency and the costs involved, our research focused only on one country (Greece) and one hospital; it involved a limited number of participants and GMB sessions; and the analysis was conducted by the same researcher that conducted also the interviews and the GMB sessions. Future research could enable further validation of our findings through triangulation, e.g. by giving the data to other researchers to analyse them (Turner et al., 2014) and by repeating the GMB sessions with larger participant groups, ideally from different hospitals in Greece, and later on even from different countries, in order to refine the *Conceptual Model of Hospital Performance* by disconfirmatory techniques (Andersen et al., 2012) and derive a more universal and generalizable model.

Finally, following Scott et al.'s (2015) suggestion of *moving from single cases to multiple cases in GMB projects*, future empirical studies could adapt our research design and use a comparative, multiple-case-study approach to explore hospital performance mechanisms and dynamics. Focusing on many different hospital cases and conducting GMB sessions in different European countries, for example, would enable comparative research into the systemic view of hospital performance as perceived by stakeholders in Europe. By including hospital

stakeholders from different countries and by conducting GMB sessions in different hospitals and settings, both in the private and in the public sector, this research would lead to a more validated, universal and context-free representation of hospital performance through disconfirmation (Andersen et al., 2012).

5.6 Conclusion

As far as the Suitability of the Methodological Approach and Research Strategy is concerned, we chose them as hospital performance is a quite broad and rather vague concept, for which existing definitions differ widely according to different stakeholder groups, and thus we needed an approach that can give us the systemic view of the public hospital and of the factors that affect its performance, as perceived by the various stakeholders. Moreover, the *Grounded Theory Building Strategy* we used (De Gooyert, 2016; 2018), which uses iteratively existing theory and case qualitative data for model building to make a theoretical contribution with system dynamics, allowed us combine the longitudinal with the cross-sectional data and the exploratory with the explanatory element in our research. More specifically, it allowed us to combine the longitudinal time frame of our literature review, which followed the historical development of public hospital performance in Greece over the last ten years (2009-2020), with the present-focused, cross-sectional, case-based, field data gathered from documents and stakeholders of a Greek public hospital, to plan future policies. Furthermore, it allowed us to combine the exploratory and explanatory element in our research, trying simultaneously to explain why the documented, counterintuitive negative outcomes on performance after the Greek healthcare reform emerged and what their underlying causes are, and build on a well-developed body of knowledge as well as field, case-based data to shed light on how hospital performance is perceived and what mechanisms drive its trend (dynamic behaviour).

As far as the feasibility of the chosen methods and the research implementation are concerned, a lot of proactiveness and planning ahead was necessary by the researcher in order to successfully complete the research project respecting all ethical and practical issues that arose. Our careful risk assessment and all the precautions we took materialised as the coronavirus crisis burst out during our research implementation and threatened to defile all our efforts. The relationship which the researcher had already built with the participants, the legal bounds that she invoked (as all the authorisations were already in place) as well as the dexterity and perseverance in which she handled the issues and challenges that arose was vital for the successful implementation of the research.

Our ethical statement reflects the three basic principles of research ethics, namely no harm to participants, voluntary consent, scientific integrity (Denscombe, 2012, pp.128-130), and is based on the five fundamental principles of the Ethics Assessment Committee Law and Management (EACLM) of the Radboud University of Nijmegen, namely: reflexivity and awareness, transparency, human dignity, protection of basic rights, and a fair distribution of the benefits and burdens of research[33]. In order to assure that our ethical statement is being met throughout the research design, planning and implementation, this research has been conducted with respect to the *Academy of Management (AOM) Code of Ethics* (2006), the *System Dynamics Society Code of Conduct* (V4.2

[33] See: https://www.ru.nl/law/research/ethics-assessment-commttee/ethics-self-assessment-criteria/

28/01/19) and the *General Data Protection Regulation* (GDPR) of the Data Protection Act 2018 (DPA 2018). Our extensive risk assessment, as well as the measures and precautions undertaken based on this risk assessment for the protection of the participants in terms of potential harm, voluntary participation, informed consent, privacy, identity, confidentiality, etc, are analytically presented and analysed in Appendix 26.

As regards the rigour of this study, in a qualitative research study following the constructivism paradigm reliability takes the form of confidence to the model and trustworthiness to the research findings, because objectivity cannot be accomplished in such research paradigms (Cypress, 2017; Sterman, 2002). Instead, our qualitative analysis is valuable in its subjectivity, as participants are creating a model of shared, "collective" reality and actively constructing meaning given to the performance indicators of the shared model. Trustworthiness in such a research context requires the creation of: Credibility (i.e., trust in the 'truth' of the findings and observations); Transferability (i.e., proving that the findings are applicable in other situations as well); Dependability (i.e., proving that the findings are consistent and could be replicated); and Confirmability (i.e., proving that there is an adequate level of neutrality in the data gathered).

Credibility and internal validity was ensured by means of: Prolonged Engagement and Persistent Observation; Triangulation; Negative case analysis and Member-checking. Transferability and external validity was ensured mainly by the rich, detailed qualitative data and the Thick Descriptions of all the model variables (available in Appendix 24); model links (available in Appendix 24); and model loops (available in Appendix 23 and analysed in chapter 8), which allow the readers interpret the results and see if they can be generalized to other contexts. Dependability was ensured by the explicit descriptions of the research design and the research methods selected and used, along with the fact that the researcher is being open, honest, transparent and explicit in the present research dissertation regarding all the methodological decisions and choices she made, as well as regarding the research implementation, the data collection, analysis and dissemination. Finally, Confirmability was achieved by a number of measures we undertook, such as cultivating the researcher's skills; ensuring relevance of the researchers' background in respect to the research objectives and setting, and the capabilities and skills of the researcher to conduct qualitative research in general, and System Dynamics research specifically; cooperation with the gatekeeper during the selection of participants; ensuring informed consent and anonymity; as well as GMB sessions tape-recording to ensure that the conclusions of the research study are influenced only by the participants and are not biased by the researcher's interests.

CHAPTER 6 – THE CASE STUDY

In chapter 6 we introduce our case study and we present the Greek Healthcare Reform and its negative consequences generally on the performance of Greek hospitals and, more specifically, on the performance of our case hospital. As the focus of this research study is to contribute to identifying pitfalls and unintended consequences following the decision to adopt a PM System in healthcare organisations, we reviewed the measures of the Greek Healthcare Reform that have recently been implemented to improve performance of the Greek public healthcare sector. Therefore, we investigated the main pillars of the Greek Healthcare Reform and outlined the main unintended consequences reported by scholars. More precisely, in section 6.1 we present our findings from the critical review of the literature around the Greek healthcare reform and we describe the main pillars of the reform, the measures and policies adopted, the new legislative framework (Law N4369/16) for PM in Greek public hospitals and the reform's documented negative consequences on public hospitals' performance. In section 6.2 we present our findings from the documents' analysis and from the preliminary interviews we conducted with four stakeholders of the case hospital, and we describe the traditional PM at the case hospital. We show how the new measures and policies are incorporated in the hospital structure; how the new legislative framework (Law N4369/16) is implemented in the case hospital; we present and discuss the strategic & operational goals set by the hospital managers; and we analyse some practical difficulties in the traditional PM implementation at the case hospital. This chapter outlines the negative consequences of the Greek healthcare reform in Greek public hospitals in general and shows the limits of traditional PM at the case hospital in particular, while it also demonstrates the need for a dynamic performance management in the public healthcare sector. Thus, this chapter sets the grounding for the analysis that will follow in the next chapters.

6.1 The main Pillars of the Greek Healthcare Reform: Findings from the Critical Literature Review

6.1.1 The Greek National Healthcare System

Greece is a member of the European Union (EU), since 1981 and a member of the Eurozone since 2001. It has a population of almost 11 million and, as in most southern European countries, public health is challenged by demographic changes such as the ageing population and the diminishing natural population growth (OECD & European Observatory on Health Systems and Policies, 2019; OECD & European Union [EU], 2020). The economic and debt crisis of 2009 had a serious impact on the Greek economy, leading to more than 25% loss of the gross domestic product and to the adoption of three successive Economic Adjustment Programmes and large-scale austerity measures implying significant reductions to public spending, including the spending of the Greek National Healthcare System (Economou, 2010; Economou et al., 2017).

The Greek National Healthcare System (known as "*ESY",* which stands for *Εθνικό Σύστημα Υγείας*) remains one of the least developed amongst OECD countries, with many gaps in the delivery, organisation and funding (European Commission, 2021). However, it has the leading place in the Greek healthcare system - especially when it comes to acute care - because it provides universal coverage to the entire population (OECD & EU, 2020).

According to the 2017 report of the European Observatory (Economou et al., 2017), ESY provides the whole range of primary, secondary and acute care through rural surgeries, health centres and public hospitals. The Ministry of Health is still the main responsible for the planning and regulation of the ESY and the healthcare sector remains highly regulated by the central government, in spite of the establishment of the seven Regional Health Authorities (known as YPEs) in 2004. These entities were supposed to take over the health care planning, organization and provision and lighten the burden of the Ministry. However, until today they have exercised only limited powers and mostly act as a mediator between the Ministry and the hospitals or the regional health centres (Economou et al., 2017; European Commission, 2021).

Since 1990, the need for managerial and organisational reform has been recognised and initiated in Greece, in order to make the NHS more efficient and effective. During the last decades, Greece has incorporated the EU regulations and directives concerning professional qualifications of health personnel, medical equipment, pharmaceuticals, VHI and cross-border health care into the national legislation (OECD & European Observatory on Health Systems and Policies, 2019). However, intersectorality is still not well developed and health impact assessment measures are not systematically applied, while the Greek public health sector is still characterised by multiple decision-making centres, overregulation, extensive political party's penetration in public management as well as truculent and irrational influences by labor unions (Economou, 2010; Minogiannis, 2012; OECD & European Observatory on Health Systems and Policies, 2019; Theodorakioglou & Tsiotra, 2000). Still today Greece has not developed adequate mechanisms for resources planning and allocation and the primary care system is still underdeveloped, creating major challenges in access, continuity of care and coordination as well as comprehensiveness of services for patients. The Greek health care system is strongly centred around hospitals, all of which provide both inpatient and outpatient services, operating simultaneously as primary, secondary and/or tertiary healthcare providers. Substitution policies to replace inpatient care with less expensive outpatient, home care and day care are barely existent and the degree of integration between primary and secondary care providers is low, leading to overcrowding in hospitals (OECD & European Observatory on Health Systems and Policies, 2019).

According to Economou et al. (2017), ESY is financed by the state budget via direct and indirect tax revenues and social insurance contributions. Health expenditure dropped rapidly during the economic crisis and health spending per capita in Greece is around 45 % less than the EU average in 2019. Furthermore, a very large share of spending comes from households, including informal payments, while spending on inpatient care is disproportionally dominant (Economou et al., 2017). The healthcare budget is set annually by the Ministry of Finance and divided into the different Directorates and services managed by the Ministry of Health. After the healthcare reform, the annual budget of each healthcare entity (i.e., hospitals, health centres) is proposed by the relevant YPE at the end of the previous fiscal year and based on the hospital spending of that same year, which is a measure that was adopted in order to limit expenses. Based on the suggestion of the YPE, a decision is issued by the health minister specifying and approving the annual budget for each entity. However, as charges for health services are calculated on the basis of a complicated reimbursement system and the reimbursement fees for the services have not been updated for years, hospitals and other public services run huge deficits every year which

are usually covered by the state budget in retrospect (Maniadakis, 2012; OECD & European Observatory on Health Systems and Policies, 2019).

The staff of ESY (i.e., doctors, nurses, administrative and paramedic staff of the rural surgeries, health centres and public hospitals) are permanent, full-time public employees who are directly paid a fixed salary by the central government – as all public employees do - and do not burden the approved budget of the hospital or health centre where they work. However, the ministry gives the option to the health entities which need extra personnel to hire them under fixed-term contracts of employment and pay them from the entity's approved budget (OECD & EU, 2018, 2020).

6.1.2 The Greek Healthcare Reform: Measures and Policies adopted

According to Minogiannis (2012), a healthcare reform in Greece was critical not only because the high health care expenditure of the previous years was largely responsible for the deflection of state finances, but also because the continuing recession absorbed funds and resources from the public health care system in order to help the population cope with the overall consequences of the Greek economic crisis of 2009. The Greek healthcare system was –and still is- characterized by fragmentation in coverage, funding and delivery mechanisms (Mossialos et al, 2005; Oikonomou & Tountas, 2011) while health policy in Greece *"... is increasingly an elaborate structure of ideas set atop rather fragile pillars of political comprehension, and institutional capacity"* (Minogiannis, 2012). Analysts agree that the scarce human and financial resources of healthcare in Greece have always been distributed following historical and political processes and have never been linked to performance standards (Kyriopoulos & Tsalikis, 1993; Mossialos et al, 2005; Oikonomou & Mariolis, 2009), which has prevented the Greek health system from presenting incentives for effectiveness and efficiency, and has led to inefficient management and decision-making in all levels (strategic, supervisory, operational). When it comes to Greek public hospitals, those mechanisms are even more resistant to change, due to the bureaucratic and chaotic structure of the public health system in the macro-level and its incompetent administration in the micro-level (Economou, 2010; Minogiannis, 2012). Thus, the healthcare reform had to focus not only on the reformation of the Greek health policy, but also on the redesigning of the existing decision-making mechanisms that would allow such a policy to be implemented in the micro-level administration of hospitals and other service units (Minogiannis, 2012; Theodorakioglou & Tsiotra, 2000).

The set of reforms included structural and process changes in almost all aspects of the National Healthcare System, including public health expenditure and financing, management and delivery of care, workforce, services, pharmaceutical and health insurance policy and had a major impact on public hospitals function as well (Simou & Koutsogeorgou, 2014). Hospital structure, payments, recruiting, administration, financing, procurement and monitoring were largely addressed by the reform. Hospital interventions after the financial crisis included services and procurement restructuring; closures of several primary healthcare units; extensive cuts in expenditure, budgets and staff salaries; limiting recruitment of healthcare personnel; introduction of a double-entry hospital accounting system; collecting data on activity and expenditures of hospitals on a monthly basis; obligation for regular publication of audited balance sheets; revision of pricing and costing mechanisms; use of a uniform coding system

for medical supplies; introduction of hospital payments via the diagnosis-related-group system; and the introduction of e-forms in hospital accounting (Economou et al., 2017; OECD & EU, 2020; OECD & European Observatory on Health Systems and Policies, 2019; Simou & Koutsogeorgou, 2014).

6.1.3 The New Legislative Framework (Law N4369/16) for Performance Management

The need for performance management in public administration was recently recognised by the Greek legislation in Law 4369 of the year 2016 (N4369/16)[34], which in the article 22 provides that all public organizations must set objectives. More specifically, this law in the article 22 titled *"Setting objectives",* provides that setting objectives is necessary in order to improve the efficiency and the collective action of the public administration, and in order to fulfil the mission of the public service and improve its response to the needs of the society.

Law N4369 /16 recognises the need for performance management in all public institutions, and that the heads of all public organisations are supposed to set performance objectives starting from the strategic objectives of the relevant governing ministry or authority, as in paragraph 2 of the article 22. Subsequently, performance objectives in public hospitals should follow the long-term, strategic goals of the Ministry of Health, as the Ministry of Health is the main government body responsible for governing and regulating the healthcare system of Greece and all the public health entities, such as public hospitals and primary healthcare services. More specifically, in the paragraph 2 of the article 22 it is mentioned that *"Within the first week of October of each year, the Minister or the governing authority of each public entity shall notify and distribute to the relevant public services the strategic objectives of the service for the following year".* Thus, performance objectives in public hospitals cannot be outside or beyond the strategic planning and the long-term, strategic goals of the Ministry of Health. Those long-term strategic goals for public hospitals are therefore set by the Ministry of Health and the political leadership every few years. Currently there are three strategic objectives for the health services of the country, with a time period of implementation between 2017-2020, targeting quality issues, security issues, and patient satisfaction issues[35].

As mentioned above, the Law N4369 /16 provides that the strategic objectives of the Governing authority should be further specified and operationalised at a lower level. Thus, according to the Legislative Framework the long-term goals of the Ministry of Health should be fragmented and operationalised for all different public health

[34] See: https://www.taxheaven.gr/law/4369/2016

[35] The Strategic Goals of the Greek Ministry of Health for the period 2017-2020 are:

1st strategic objective: Upgrading the National Health System and ensuring the right of citizens to universal and equal access to public structures, with safe and high-quality health care and reliable primary health care and public health services.

2nd strategic objective: Improvement of the Management and efficient operation of the National Health System and of the Public Health Services, through transparent, democratic, participatory and technologically modernized and efficient governance, which promotes the evidence-based health care, respects the dignity and the rights of citizens, and is subject to the principles of public accountability, social control and service planning, based on decentralization, sewerage and documented health needs of the population.

3rd strategic objective: Sustainable financing of the National Health System and the public health services, with synergy of resources from the general taxation and the social Insurance System, with elimination of the "catastrophic" private spending of citizens and the economic obstacles to the universal coverage of the population, with substantial control of the induced demand, waste and corruption in the Health System and with additional - supplementary operation of the private sector in the direction of the full coverage of the citizens' health needs.

For more information, see: https://www.moh.gov.gr/articles/news/4541-strathgikoi-stoxwn-kai-aksones-parembashs-toy-ypoyrgeioy-ygeias-gia-tis-yphresies-ygeias-ths-xwras-me-xronikh-periodo-efarmoghs-thn-trietia-2017-2020-raquo

services, (i.e. hospitals, primary health services, etc.) by the next regulatory public body in the hierarchy, which are essentially the seven Regional Health Authorities (known as YPEs). As the public bodies that mediate between the Ministry of Health and the health services of each region of Greece, these entities were supposed to take over the health care planning and organization, and be responsible for the specification and development of health policies of public hospitals and health centres, lightening the burden of the Ministry and decentralising the control mechanisms from the central government to the Greek regions[36]. However, until today they have exercised only limited powers and certainly have not overtook an active role when it comes to setting performance objectives (OECD & European Observatory on Health Systems and Policies, 2019). Subsequently, the entire responsibility for the goal-setting and performance management practically still lies at the discretion of each health entity's local administration.

6.1.4 The Reform's Documented Negative Consequences on Public Hospitals' Performance

A systematic review of the literature published from January 2009 to March 2013 around the consequences that the financial crisis has had for health and healthcare in Greece concluded that *"the recent efforts to reform the Greek National Health System have been focusing mainly on short-term effects by reducing expenditure, while the measures imposed seem to have dubious long-term consequences for Greek public health and healthcare"* (Simou & Koutsogeorgou, 2014). Other studies showed that in public hospitals during the recession there were higher incoming patients and admissions rates, as patients could no longer afford private care (Simou & Koutsogeorgou, 2014); deficiencies in materials, equipment, and personnel (Economou et al., 2017); negative results for hospital care output quality (Keramidou & Triantafyllopoulos, 2018); deterioration of access to and provision of healthcare services, increasing out-of-pocket contributions, and growing monitoring and efficiency issues (OECD & European Observatory on Health Systems and Policies, 2019).

The set of reforms included structural and process changes in almost all aspects of the National Healthcare System and had a major impact on public hospitals function as well. Hospital structure, payments, recruiting and financing were largely addressed by the reform, with the most substantial changes taking place between 2012–2013. In that sense, the hospital function was mainly affected negatively by: (1) the cuts in hospital budgets and expenditure, a measure that prohibits investments in equipment and facilities and might also be linked with the documented deficiencies in materials and equipment; (2) closures of several primary healthcare units, which resulted in increased incoming patients and admissions rates at public hospitals; (3) a major shift from private to public when it comes to acute care, because of the economic pressures of households that could no longer afford private care, leading to even higher incoming patients and admissions rates at public hospitals; (4) restrictions in the recruitment of healthcare personnel, which resulted at serious understaffing of public hospitals; (5) serious cuts in the salaries of healthcare personnel, which resulted in job-dissatisfaction and low morale (Economou et al., 2017; Keramidou & Triantafyllopoulos, 2018; OECD & European Observatory on Health Systems and Policies, 2019; Simou & Koutsogeorgou, 2014).

[36] See: https://www.moh.gov.gr/articles/ministry

Furthermore, hospital salaries, administration, procurement and monitoring were largely addressed by the reform, with the most substantial changes taking place between 2012–2013. In that sense, the hospital function was mainly affected negatively by: (1) the serious cuts in the salaries of healthcare personnel and the job-dissatisfaction that was caused; (2) the low nurses-to-patient ratios which became lower after the reform, and resulted in many of them applying for early retirement, leaving the remaining ones to work overtime in order to cover all necessary shifts, with fewer resources (e.g., drugs and sterilized equipment) and with fewer days-off; (3) the new obligations for reporting and accounting (i.e., double-entry hospital accounting system, regular publication of audited balance sheets, use of a uniform coding system for medical supplies, introduction of hospital payments via the Diagnosis-related group system, introduction of e-forms to hospital accounting) which resulted in increased workload for the remaining personnel; (4) the fact that the vast majority of public hospitals remain without clear performance objectives, planning or control, despite the existence of an explicit Legislative Framework for goal-setting (Law N4369 /16); (5) the fact that the vast majority of public hospitals still operate without actual quality control of procedures and services, despite the existence of Governing & Regulating Bodies for Performance Quality Assurance such as the Ministry of Health, the Health Regions, the National Quality Institutions and the Quality Committees of Public Hospitals (Economou et al., 2017; Keramidou & Triantafyllopoulos, 2018; OECD & European Observatory on Health Systems and Policies, 2019; Simou & Koutsogeorgou, 2014).

Especially for the healthcare personnel, the impact of the reforms was quite strong as they experienced 15% cut in all public sector salaries, abolishment of the thirteenth and fourteenth monthly salary and 10% cut in their pensions and increase in their retirement age from the age of 65 to the age of 67 (Simou & Koutsogeorgou, 2014). Furthermore, limiting recruitment of healthcare personnel led to understaffing of all public institutions and, subsequently, hospitals were constrained to operate with 10–40% fewer workers whose salary had been cut by 40% in total (Simou & Koutsogeorgou, 2014).

Nurses were disproportionately affected by those measures, probably because the nurse-to-patient ratio was already low in Greek public hospitals (OECD & European Observatory on Health Systems and Policies, 2019). The new measures meant that graduate nurses would remain unemployed for up to four years upon graduation and that emergency nurses would have to work overtime, with fewer resources (e.g., drugs and sterilized equipment), with fewer days-off and lower salary than before the crisis, and with the prospect to work more years to receive a lower pension, which led many of them -together with many other healthcare workers- apply for early retirement (Simou & Koutsogeorgou, 2014).

Moreover, Greece has the highest number of doctors along with the lowest number of nurses per capita among the OECD countries (OECD & EU, 2018, 2020), which causes operational and service distortions and supplier-induced demand phenomena (OECD & European Observatory on Health Systems and Policies, 2019). The undersupply of nurses is particularly pressing in Greek public hospitals. Moreover, only 1 in 16 doctors in Greece are general practitioners (GPs), compared to 1 in 4 on average in the EU (OECD & EU, 2018, 2020). Finally, there are imbalances between various specialties, and shortages of both doctors working in public

hospitals and GPs working in rural areas (Economou et al., 2017; OECD & European Observatory on Health Systems and Policies, 2019).

Furthermore, in 2015 there were 4.3 hospital beds per 1000 population according to the statistics of the World Health Organisation[37] and in 2017 the number dropped to 4.2 – somewhat below the EU average of 5.0 - but physical and human resources are not equally distributed, both geographically and in terms of skills mix (OECD & European Observatory on Health Systems and Policies, 2019). Of the 283 hospitals existing in 2014 (excluding military and prison hospitals), around 60% of all beds were located in Attica (which includes the capital city of Athens) and Central Macedonia (where Greece's second largest city, Thessaloniki, is located). Finally, the high intransparency and discontinuity of the system creates accessibility issues, while also there is a total lack of information accessible to patients in hospital care, as there are no information on costs or quality of services, medical errors, patient satisfaction, hospital clinical outcomes, hospital waiting times or comparative information about the quality of different providers (Economou et al., 2017; OECD & EU, 2018, 2020; OECD & European Observatory on Health Systems and Policies, 2019).

Despite the fact that it might still be early to judge the long-term outcomes of the reform, the early signs from the limited research that exists are alarming. More specifically, our review showed that after the healthcare reform, in Greek public hospitals: (1) hospital service quality significantly deteriorated, as reported both by nurses and patients; (2) hospital safety worsened and became poor or failing, as reported both by nurses and patients; (3) nurses' burnout, job dissatisfaction, and intention to leave their work skyrocketed; (4) patient satisfaction decreased; (5) waiting lists and waiting times increased; (6) communication with nurses and doctors is considered inadequate by the patients; (7) the rate of under-the-table (informal) payments increased; (8) Hospital-related Mortality Rates increased; (9) Medical Errors significantly increased; (10) Nosocomial & Multidrug-resistant bacteria Infections rates are extremely high; (11) Diffusion of clinical guidelines and treatment protocols remains weak (Economou et al., 2017; Keramidou & Triantafyllopoulos, 2018; OECD & EU, 2018, 2020; OECD & European Observatory on Health Systems and Policies, 2019; Simou & Koutsogeorgou, 2014).

6.2 The Case Hospital: Findings from the Documents Analysis and Preliminary Interviews

The public hospital where we conducted our research, which we will onwards refer to as "the case hospital" or simply "the hospital" (as our research protocol does not allow us to reveal neither the name of the hospital nor the identities of the participants) belongs to the 1st Health Region of Attica and - as most university hospitals in Greece - it consists of four divisions: the Medical, the Nursing, the Administrative & Financial and the Technical division. All four divisions are equal to each other, and each one has its own independent structure, departments and department supervisors, independent offices and staff. Each of the four divisions is managed by a division manager, and all of them are subordinated to the Deputy Executive Director, the Executive Director and the Hospital Board, which consists of the two directors and three other hospital employees as members. More specifically:

[37] See: https://apps.who.int/gho/data/node.country.country-GRC?lang=en

(1) The Administrative Division is currently divided into two sub-divisions: Administrative and Financial. Each sub-division includes its departments and independent offices.
(2) The Nursing Division is currently divided into five sectors. Each sector covers the respective departments of the Medical Division sector.
(3) The Medical Service consists of the Sectors and the Interdepartmental Departments. The sectors include the pathological, the surgical and the laboratory. The Interdepartmental Departments include the ER, the day care unit, the Mediterranean Anaemia unit, the prenatal diagnosis unit and the short hospital stay unit. In the Sectors, there are regular outpatient clinics of corresponding specialties with the specialties of the serving doctors in the Hospital. In addition to doctors, the positions of scientific, non-medical Staff (e.g., technicians, physiotherapists, chemists, biochemists, physicists, etc.) belong to the same department.
(4) the Technical Service includes the Technical department and the Biomedical Technology department.

According to the statement on its website, where the mission, vision and values of the hospital are declared, the mission of the hospital is *"the provision of hospital care to every incoming person in need equally (in the sense of gravity, which requires that only cases of the same severity be treated equally) and regardless of economic, social, racial, religious or other discrimination"*. The vision of the Hospital is *"the provision of high-quality health services to all incoming patients through the innovation and cooperation of its specialized human resources, in order to be recognized by patients, the community and the staff for its optimal operation and immediate service"*. Finally, the values of the Hospital mentioned on its website are: *(1) Ethics:* the behaviour of each employee is sought to be manifested by moral practices such as selflessness, justice, respect for human beings; *(2) Information:* the hospital supports full and thorough patient information on their problem; *(3) Support:* support of patients and their families; *(4) Professionalism:* the professionalism of employees derived from the cooperative spirit, organizational logic, trust and mutual respect is promoted and recognized; and *(5) Continuous improvement*, in order to encourage creativity, initiative, innovation, monitoring and continuous self-assessment of the procedures and results of the Hospital.

6.2.1 Strategic & Operational Goals at the Case Hospital

Despite the practical difficulties in implementing the Legislative Framework of Law N4369 /16, some public organisations have managed – or at least have tried - to implement it with the support of the *Ministry of Interior and Administrative Reconstruction* in order to set objectives for their departments and units and start managing for performance. Among them, is our case hospital. The Executive Director, Deputy Executive Director and the board of the case hospital changed in the end of 2019. The period of service of the new board and directors is three full years (from December 2019 until December 2022). Right from the beginning of its 3-year period of service, the hospital board recognised the importance of complying with the legislative framework for performance management, and they initiated the implementation of the goal-setting procedure in the hospital as provided by Law N4369/16.

The hospital managed to set performance objectives for 2020 centrally, as well as operational objectives for two of the hospital divisions (i.e., the Administrative/Financial and the Nursing division), as provided by Law

N4369 /16. Furthermore, the board decided that the rules and conditions set by the legislative framework should be complied with. For example, they voted that at the beginning of October of each year the hospital goals and priorities will be notified to the managers of the four divisions of the hospital and they, in turn, will need to determine the operational objectives and actions for the departments and units of the hospital under their supervision and notify the heads of the departments and employees by the end of December, in order for them to set goals as well. The direct subordinates of the central administration are the four division managers, who are the heads of the four divisions of the hospital (medical, nursing, administrative/financial, technical). According to Law N4369/16, each one of them needed to set goals for their division. Only two of them (the nursing division manager and the administrative/financial division manager) out of the four division managers officially responded to the central administration's call and set goals for their divisions.

During their first few board meetings, the hospital directors analysed the Health Ministry's strategic goals and voted for the hospital's goals and priorities for the next three years of their service. Those goals that the central administration set, and can be found at the hospital's website, are:

(1) The provision of primary, secondary and tertiary health care to the population of responsibility of the 1st health region of Attica, as well as to patients referred by other health regions. Health care is provided equally to every citizen regardless of their economic, social and professional status, in accordance with the rules of the National Health System and Social Security legislation.

(2) The specialization, continuous education and training of doctors, nurses and other health professions, with the development and implementation of educational programs. The education of students of the medical departments of the University of Athens, as well as the students of other medical-related departments.

(3) The development and promotion of health research. In this direction, the hospital implements and develops research programs and cooperates with other relevant bodies, as well as international organizations, scientific and research centres.

(4) The cooperation with nursing institutions and other health units for the development and upgrade of the health care provided in general and in particular, with regard to the implementation of educational programs, as well as special programs for study and evaluation of health issues encountered in the 1st health region of Attica.

(5) The implementation of new methods and forms of care, aiming at the effective promotion of citizens' health.

(6) The development of procedures that facilitate the strategic goals set by the Ministry of Health and Social Solidarity, the 1st Health region of Attica and the Board of Directors of the Hospital.

It is quite obvious that all the above mentioned "goals'' cannot be considered performance goals but rather as the extension of the hospital's mission. They are general and not explicit; they do not entail any time horizon and, most importantly, they do not include any performance target. Thus, they cannot be considered as a helpful guide or tool for effective performance management.

According to the relevant internal documents collected and analysed (available in Appendixes 16 and 17) among the operational goals of the Nursing Division were: (1) safeguarding citizens' and patients' right for universal and equal access to the hospital; (2) improving the quality of nursing services by redesigning services to ensure and document safety of citizens, patients and workers; (3) organizing and implementing educational

programs for staff development; (4) increasing satisfaction of internal and external patients of the hospital; (5) ensuring sustainability of the services provided with systematic monitoring of the basic aspects of activity: financial, anthropocentric, internal processes, development and learning. Again, those "goals'' cannot be considered performance goals, nor a helpful tool for effective performance management.

Finally, there were a few more goals set, which we consider a bit more specific and - although they also did not entail any time horizon or any performance target - could be considered a good start for PM in the hospital. Those goals were: (1) standardization of the nursing forms of the nursing departments and units; (2) standardization of clinical procedures; (3) use of an Information System in the interdepartmental communication; (4) application of the digital signature and electronic document management.

6.2.2 Practical Difficulties in the PM Implementation

Despite the goal setting procedure that took place in the hospital, and despite the existence of written statements of clear objectives in the nursing and administrative divisions, as described in the previous sections of this chapter, the preliminary interviews that we conducted with four of the participant stakeholders revealed that no further actions were taken in order to accomplish those objectives, neither by the managers nor from the employees of the two divisions.

According to the participants, one reason for that might be that the Regional Health Authorities have failed to exercise their role of setting performance objectives, as we mentioned above. Thus, the entire responsibility for goal-setting and performance management practically lies at the discretion of the administration of each health service, i.e., the general and the department managers of the hospital. Subsequently, it is entirely up to the hospital managers to take action if they want to, if they can and if they are allowed to do so by the environment in which they operate. It can be that individual employees or department managers start such an action but, even in that case, it is purely a matter of initiative and competency between the levels of hierarchy of the organization, which is contrary to how the legislative framework (Law N4369 /16) provides that actions should be taken.

Furthermore, the managers' mental models, management approach and commitment seem to play a key role. The head managers of the divisions, departments and units of the hospital should embrace this idea of managing for performance and devote time to setting operational goals together with their employees, according to the goals of the central administration (executive directors and the board). Then they need to come up with an analysis of where they currently stand, where they we want to go, and how they can achieve it. However, due to the lack of time and/or competence, such an analysis is not always feasible.

Another key difficulty, according to the participants, is the fact that the legislative framework (Law N4369 /16) is intertwined with employee evaluation. According to Law N4369 /16, when the fragmentation of goals from the strategic to the operational level begins, and actions are taken from the higher towards the lower levels of the hierarchy, the head of every hospital department or unit is called upon to set goals for each employee, specifying time-schedule and performance indicators. However, supervisors and managers are reluctant to strictly evaluate their employees and set specific goals, as that could negatively influence work relations and productivity and create hostility in the organisation. This might be attributed to the organisational culture of public hospitals (e.g.,

often oriented to passively react to a growing backlog, rather than investigating what causes such a backlog and how to define proper targets to avoid it) and the pressure that health workers already face because of the understaffing that hospitals have undergone, as a consequence of the healthcare reform.

It is worth mentioning that during our preliminary interviews with those two division managers (which happen to be 2 out of the four participants that we preliminary interviewed), we asked whether the goals were set solely by them or collectively by their subordinates and employees. The head of the administrative division responded that she wrote them down without any help, while the head of the nursing division said that she did it with the help of two other nurses- heads of nursing units. In both cases, no employees were involved. However, as we will see in the next sections, most of those objectives set by the division managers did come up during the GMB sessions as important ones for the improvement of the problem of low hospital performance, when the participants got deeper into the variables connected to performance.

Our analysis revealed that participants seem to treat such objectives as completely separated from performance and quality, and regard them as totally outside of their everyday tasks. More specifically, none of the interviewees mentioned working on those objectives among his/her everyday tasks, and none of them mentioned their importance as one of his/her priorities. When asked about performance and quality, none of those objectives was mentioned by any of the participants. Furthermore, when they were specifically asked about the main challenges they face in their work, all of them talked about the understaffing as the main problem they face.

Moreover, when we specifically asked the two division managers why those objectives were set instead of some others, they answered that on the one hand, they are obliged to set objectives and they know that they will be evaluated on the basis of the completion of those objectives. On the other hand, they do not have the power to solve their real problems, such as the understaffing, because this is something that is decided by the central government. Thus, they needed to set objectives that are "achievable" without the intervention of the Ministry of Health, and they believe there are *"very few things they can do alone"*. Thus, according to our view and analysis, they might have ended up setting "easy" and "doable" objectives, most of which, however, have little or no impact on performance. Those findings are confirmed by a number of studies on *"budgetary slacks"* and performance failures in public organizations (Ajibola & Akinniyi, 2013; Andrews et al., 2006; Yılmaz et al., 2014) and reveal that goal-setting, the main PM strategy followed, is not successfully implemented and it certainly does not bring any tangible results for the hospital performance. If the objectives set have no connection with the real challenges and problems, and if employees are not part of the goal-setting procedure, then it is obvious that there is no base for pursuing goals and improving performance. Those findings of the preliminary interviews and documents analysis are validated from the findings of the pretests, conducted before the GMB sessions, presented in chapter 7.5.

6.3 Conclusions

Chapter 6 outlines the negative consequences of the Greek healthcare reform in Greek public hospitals in general, and shows the limits of traditional PM at the case hospital in particular, demonstrating the need for a

dynamic performance management in the public healthcare sector. Thus, this chapter sets the grounding for the analysis that will follow in the next chapters.

Although the performance management policies adopted during the healthcare reform in Greece were generally considered inevitable and necessary, the overall impact of the reform seems to be a negative one for Greek public hospitals' outputs and outcomes, and the major structural and process reforms that were introduced are not yet proven to have led neither to improved efficiency and effectiveness, nor to better results for patients. The new policies (i.e., structure and process reforms undertaken) undeniably contributed to the reduction of hospital spending, but they simultaneously contributed to the deterioration of hospital service quality. Despite the extensive research identifying the "pitfalls" of the Greek healthcare reform and the unintended consequences for hospital staff and patients (Aiken et al., 2012; Economou et al., 2017; Keramidou & Triantafyllopoulos, 2018; Mitropoulos et al., 2018) very little is known about the mechanisms that caused those negative effects.

The findings from the hospital documents' analysis, pretests and the preliminary interviews of the hospital stakeholders are in line with the findings of our literature review, and of many other researchers who studied the results and impact of the Greek healthcare reform. The catastrophic impact of the Greek healthcare reform policies was obvious at the case hospital, as it seems to have undermined the efficiency and effectiveness of the hospital; to have limited its ability to provide the best clinical outcomes possible according to its capacity and to have augmented the risks for patients. Finally, most of the policies identified by the participants during the GMB sessions are in line with the goals of the two divisions (administrative/financial and nursing divisions) proposed by the division managers, as found from our documents analysis and preliminary interviews, which is a form of validation of our *Policy Model of Hospital Performance*. More specifically, out of all the unintended negative outcomes of the reform documented in the literature that we presented in the section 6.1.4, we found the seven following negative outcomes to be present at the case hospital, according to the participant stakeholders of our GMB sessions: Health Workers' and Patients' perceptions of Low Safety; Low Patient Satisfaction; Informal Payments; High Mortality Rates; Numerous Medical Errors; High Nosocomial & Multidrug-Resistant Bacteria Infections Rates; Low Adherence to Clinical Guidelines and Treatment Protocols.

All in all, the findings of the literature review of the Greek healthcare reform confirms our findings from the preliminary interviews and documents analysis at the case hospital, showing that hospital service quality has paradoxically deteriorated during the last decade (2009-2019) as a consequence of the new performance management policies implemented in the case hospital during the Greek healthcare reform, and that the mechanism that led to this deterioration is not yet clear. Better understanding of the mechanisms that led to those unintended negative effects in the case hospital is crucial for the design of better healthcare policies in the future, which will facilitate hospital services quality in the long-term.

Despite the goal-setting procedure that took place in the hospital, and despite the existence of written statements of clear objectives in the nursing and administrative divisions, the preliminary interviews that we conducted with some of the participant stakeholders revealed that no further actions were taken in order to accomplish those objectives, neither by the managers nor from the employees of the two divisions. Furthermore, participants seemed to treat such objectives as completely separated from performance and quality, and totally

outside of their everyday tasks. According to our view and analysis, they might have ended up setting “easy” and “doable” objectives most of which, however, have little or no impact on performance. Those findings are confirmed by a number of studies on “budgetary slacks” and performance failures in public organizations (Ajibola & Akinniyi, 2013; Andrews et al., 2006; Yılmaz et al., 2014) and reveal that goal-setting, the main PM strategy followed, is not successfully implemented in the case hospital and it certainly does not bring any tangible results for the hospital performance. If the objectives set have no connection with the real challenges and problems, and if employees are not part of the goal-setting procedure, then it is obvious that there is no base for pursuing goals and improving performance.

Overall, our analysis showed that, unfortunately, Law N4369/16 is until today not properly implemented in the hospital. One of the reasons why this happens is that most of the “goals’’ set cannot be considered as performance goals but rather as the extension of the hospital’s mission. They are general and not explicit; they do not entail any time horizon and - most importantly - they do not include any performance target. Thus, they cannot be considered as a helpful guide or tool for effective performance management. Nevertheless, we identified four goals which we consider a bit more specific and - although they also did not entail any time horizon or any performance target - were considered as a good start for the DPM analysis that we conducted. Those goals also came up during the GMB sessions and were integrated in the CLD model that the participants built: (1) standardization of the nursing forms of the nursing departments and units; (2) standardization of clinical procedures; (3) use of an Information System in the interdepartmental communication; (4) application of the digital signature and electronic document management. All those findings of the preliminary interviews and documents analysis are validated from the findings of the pretests, conducted before the GMB sessions, presented in chapter 7.5.

CHAPTER 7 – MODEL CONCEPTUALISATION & VALIDATION

Chapter 7 corresponds to the first research question of our study, namely: *How do stakeholders define hospital performance*. To answer this question, we conducted the GMB sessions in the case hospital, first in order to help hospital stakeholders gain a better understanding of the low hospital performance of the hospital in a more systematic way, and second to help them collectively - through structured activities and facilitated discussions - define it; show its trend (dynamic behaviour) in the hospital during the last decade in a diagram (Reference Mode); and conceptualise it as a system, depicted as a qualitative system dynamics model of hospital performance *(CLD - Causal Loop Diagram)*. More specifically, in sections 7.1 and 7.2 we present the Shared Definition of hospital performance and its Historical Behaviour during the last decade *(Reference Mode)* respectively, as perceived by the hospital stakeholders who participated in our GMB sessions, and we discuss how this definition and Reference Mode was derived during the GMB sessions. In the section 7.3 and 7.4 we present the *Conceptual Model of Hospital Performance* (i.e., a CLD model that depicts the actual structure of the system at hand and can be used to explain the current low levels of hospital performance) and the *Policy Model of Hospital Performance* (i.e., a CLD model that depicts not only the actual structure of the system at hand, but also the changes in the system structure which are necessary, according to our participant stakeholders, in order for the performance to improve) and we discuss how those models were derived by the hospital stakeholders during the GMB sessions. Finally, in paragraphs 7.6 and 7.7 our GMB findings and models are evaluated and validated through other findings and triangulation techniques. More specifically, in the section 7.6 we discuss the evaluation of the GMB sessions and of the model created by the participants, through means of comparing the initial to the final understanding and consensus around hospital performance by the participant stakeholders, as documented in the findings from the preliminary interviews and pretests (conducted before the GMB sessions) on the one hand, and the findings from the CICC questionnaire and the posttests (conducted right after the GMB sessions). In section 7.7 we discuss the validation of the *Conceptual* and *Policy Models of Hospital Performance* through Triangulation (using our findings from the GMB sessions, literature, documents analysis and disconfirmatory interviews) and in terms of: structure verification, causal clarity and variable definitions. The two final versions of this CLD Model, i.e., the *Conceptual Model of Hospital Performance* (analytically discussed in chapters 8 and 9) and the *Policy Model of Hospital Performance* (analytically discussed in chapter 11) are available in Appendixes 21 and 22 respectively, and thoroughly described in terms of variables and links in Appendix 24. Those two models constitute the main outputs of the GMB sessions and will form the basis of our research analysis and findings, presented in the following chapters of this thesis.

7.1 Shared Definition of Hospital Performance

During the first part of the introductory GMB session, a short discussion led to a rough definition of hospital performance as *"anything that leads to better care for patients".* During the second part of the introductory session, however, this definition was found to be partial and not inclusive, especially regarding the health workers'

safety. As time constrained the discussion to provide a conclusive answer, we asked participants to split into subgroups and come up with one definition per subgroup. Then the group gathered altogether and connected all definitions, in a way that the information of all definitions was kept. By the end of the introductory session, hospital performance was defined as *"the provision of patient-centred care to the patient, with safety (for the patients and the staff); responsibility (adherence to protocols, proportions and procedures) and dignity (nice and clean facilities, access without waiting and without informal payments).* Appendix 18 provides evidence on the individual definitions given by the participants during the sessions, as well as the shared definition they concluded at.

Furthermore, during the first GMB session participants arrived at a unanimous conclusion regarding the feared and hoped future scenarios on how hospital performance will unfold. The hoped scenario showed a gradual growth of the hospital performance during the next decade, while the feared scenario represented the expectations by the participants of a less significant growth or a stagnation of the hospital performance during the years to come, a trend that is already ongoing during the years after the healthcare reform according to the participants. Nevertheless, despite the agreement on the hoped and feared scenario, participants revealed very different expectations from this project. Some participants focused their expectations on hospital outputs and clinical effectiveness (i.e., more appropriate diagnosis and treatment, less medical errors); some on hospital-related outcomes (i.e., increase of staff and patient safety and satisfaction, lower levels of nosocomial infections rate and of patient volumes); while others expressed their concerns about the hospital's negative impact on public health and on the catastrophic spending on health, due to the high diffusion of informal payments. The CLD model, thus, should aim at discovering how all those factors are interconnected and influenced by each other as parts of the same system: the system of hospital performance. Appendix 18 provides evidence on the hoped and feared scenarios given by the participants during the sessions.

7.2 Hospital Performance Trend during the Last Decade (Reference Mode)

The second element of this exercise was the creation by the participants of a shared graph over time that represented the performance evolution in the hospital during the last decade, i.e., over the period 2009-2019, which we will hereby refer to as the *Reference Mode*. A Reference Mode of behaviour is a graph of a variable over time, traditionally used at the beginning of System Dynamics Projects in order to depict the behaviour of the key variable over time (Sterman, 2002). The Reference Mode of behaviour has shown to be a useful tool for the purposes of GMB sessions. It serves as a basis for all discussions throughout the sessions, to develop the *Causal Loop Diagram*[38] (CLD), which serves as a *boundary object* (Black, 2013) to the creation of shared meaning and understanding between participants regarding -in our case- the system of hospital performance. Our participant stakeholders became familiar with the reasoning of this goal very fast. After a short discussion and the explanations given by the facilitator, we asked participants to split again into subgroups and create one graph per subgroup,

[38] A Causal loop diagram is a diagram containing variables and causal links, used to display a sequence of cause and effect relationships between variables of a system. For more information, see: https://online.visual-paradigm.com/knowledge/causal-loop-diagram/what-is-causal-loop-diagram/

depicting the historical behaviour (2009-2019) as well as their predictions for the future in the form of the "feared" and the "hoped" scenario that we discussed earlier. Then we gathered altogether and connected all graphs, in a way that the information of all graphs was kept.

The Reference Mode created and agreed upon by the participants showed that, despite the counterintuitive negative outcomes documented, the level of the overall performance in the case hospital has been slightly increasing after the healthcare reform and is now stabilizing. According to the participants, this is because of the gradual introduction of information systems and quality measures and protocols in public hospitals during the last decade, which were completely inexistent before. However, they still believe that the overall performance is rather low according to the new, updated international standards. Appendix 19 provides evidence and further explanations on the Reference Mode created by the participants during the GMB sessions.

7.3 Conceptual Model of Hospital Performance

After defining the concept of hospital performance and identifying its historical development over the last decade, the focus of the group moved to eliciting variables that are related to performance, in order to start building the CLD Model of Hospital Performance which is the main output of the GMB sessions. A *Causal Loop Diagram* is a diagram containing variables and causal links used to display a sequence of cause-and-effect relationships between variables of a system. This CLD formed the basis of our research analysis and results.

The facilitator first asked from the participants to think of the causes of low performance of services, as they personally experience it. In the beginning, nominal group technique was used in order to prevent groupthink and stimulate divergent thinking according to Vennix's (1996) suggestions. To simplify the task, participants were asked to list all the causes of low performance of services they could think of, and then write them down in the form of variables. Each participant was given a bunch of small (posted) papers, and they were asked to write only one variable per posted paper. Then, using again the nominal group technique, one by one the participants stood up and sticked their variables on the whiteboard while explaining its meaning. If other participants had a similar variable, they stood up and put it on top. Some of the elicited variables were directed to the so-called "parking lot"; a space on the whiteboard which included variables which are acknowledged to influence the system, yet they are out of the scope of the current project.

The next exercise was about linking the variables, and in this way the construction of the CLD began. The CLD was constructed in three stages during the first GMB session. First, variables were mapped on the whiteboard. The facilitator was trying to stimulate the addition of more variables over critically reviewing each contribution, which led to a quickly expanding model. The second stage consisted of refining the "spaghetti" model constructed during the first stage, leading to a simpler and more comprehensible model. The third stage led to the refinement of the initial model, in which the participants indicated some missing elements, reviewed some of the links and discussed changing the names of some variables.

This was the end of the first part of the GMB session, the "divergent" part, which led to the development of the so-called *Scoping Model of Hospital Performance*, which is available in Appendix 20. This model is a rather

extended and divergent version of the system at hand, combining all aspects and views, and including all the variables and links that all the participants came up with and agreed upon. This model is usually too big to analyse and get some useful and meaningful insights from. For this reason, some "convergence" is necessary in order to make the model smaller, more meaningful and more comprehensive, and in order to set the scope of the research and the boundaries of the system at hand. The *Scoping Model of Hospital Performance* was digitised by the researcher in Vensim Software through background modelling during the GMB session, and was presented to the participants after a short break.

After the break, the convergent part of the GMB session started, with the facilitator moving to exercises and scripts that led participants prioritise the variables according to their significance for hospital performance. Participants were asked to think of variables that are less important or less relevant than others and variables which are implied by others and, thus, can be omitted without changing the "meaning" of the model. This was the last exercise of the first GMB session, which was completed with a minimised version of the *Scoping Model of Hospital Performance*. This version of the model was calibrated by the researcher in Vensim Software after the first GMB session (background modelling in between the GMB sessions). This last version of the *Scoping Model of Hospital Performance* and its evolution can be found in Appendix 20.

The finalised version of the *Scoping Model of Hospital Performance* (available in in Appendix 20) was presented to the participants at the beginning of the second GMB session. After a brief presentation, participants were asked by the facilitator to look at the model and discuss in subgroups which of the variables are not influenced from the system of hospital performance (e.g., they were asked to find the variables that have only outgoing arrows but no incoming ones) and to indicate those variables as "external". In this way, without even realising it, the participants set the *scope* of the research project and the *boundaries* of the model while maintaining a quite holistic view of hospital performance, according to Sterman's (2002) suggestions. During this process of narrowing the scope, more and more emphasis was laid on maintaining the variables that are vital for the feedback structure. The variables characterised as "external" by the participants were then removed by the facilitator.

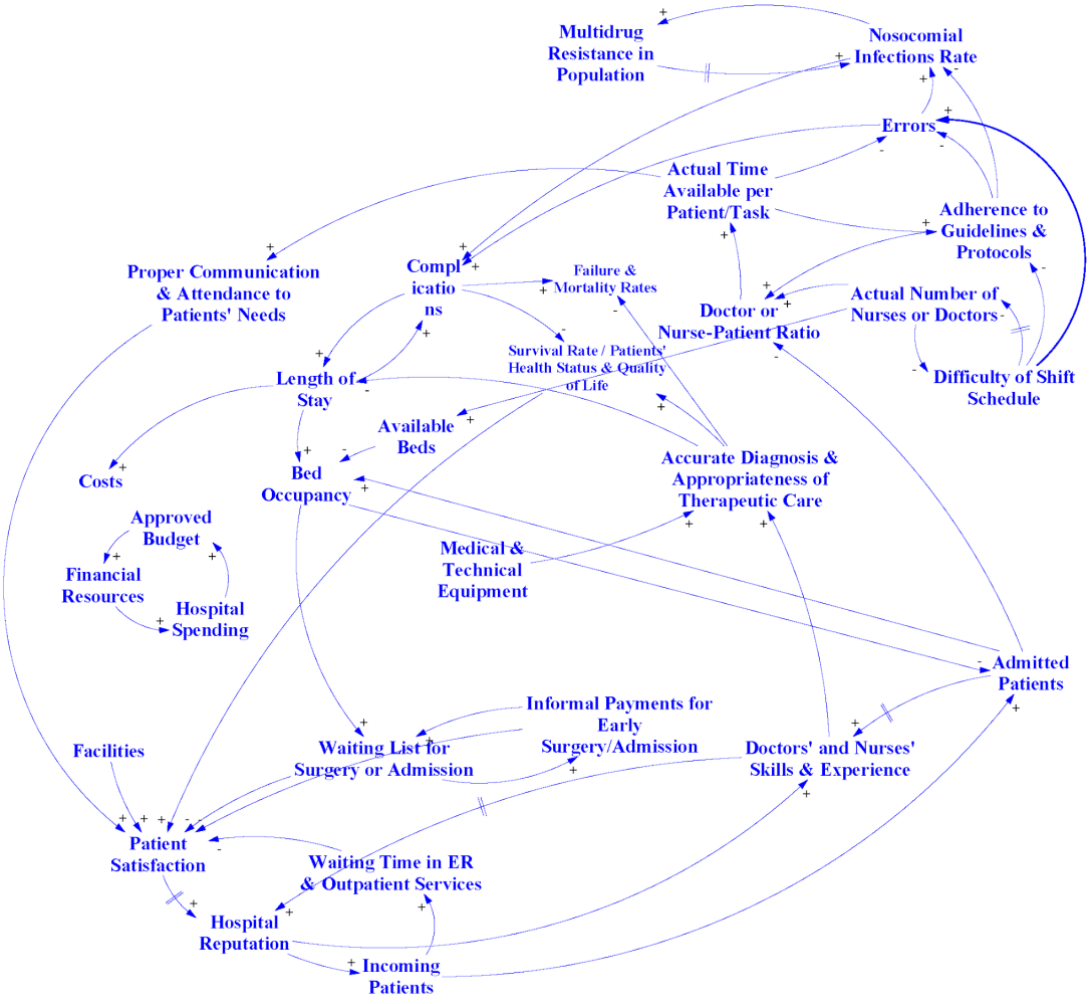
This first part of the second GMB session led to the development of the first version of the so-called *Conceptual Model of Hospital Performance*, which is a small but inclusive model that explains the current situation, the actual levels of hospital performance according to the participants' perceptions. This model incorporates the performance management policies imposed by the Greek government during the healthcare reform, and could be used to explain the dynamics of the negative outcomes documented. It depicts the actual structure of the system at hand and explains the current low levels of hospital performance. It shows what has been happening until now and what will continue to happen if no actions are taken; if no different policies that would change the "structure" of the system are implemented.

After the end of the sessions, the researcher performed a number of validation tests and seven disconfirmatory interviews to further refine and calibrate the model, and then translated this final version of the model in English. This finalised version of the *Conceptual Model of Hospital Performance* (presented in the figure below and available in Appendix 21) will form the basis of our DPM analysis and will be thoroughly analysed and discussed in the next chapter (chapter 8).

7.4 Policy Model of Hospital Performance

During the last part of the second GMB session, participants were asked to model policies for performance improvement. First, they identified leverage points for policy interventions in the model and then, based on those intervention points, they came up with concrete policy ideas. As a last step, the participants voted and their policy ideas were rated according to their feasibility and expected impact. The ones that were rated higher were later on inserted in the model as policy structure by the researcher.

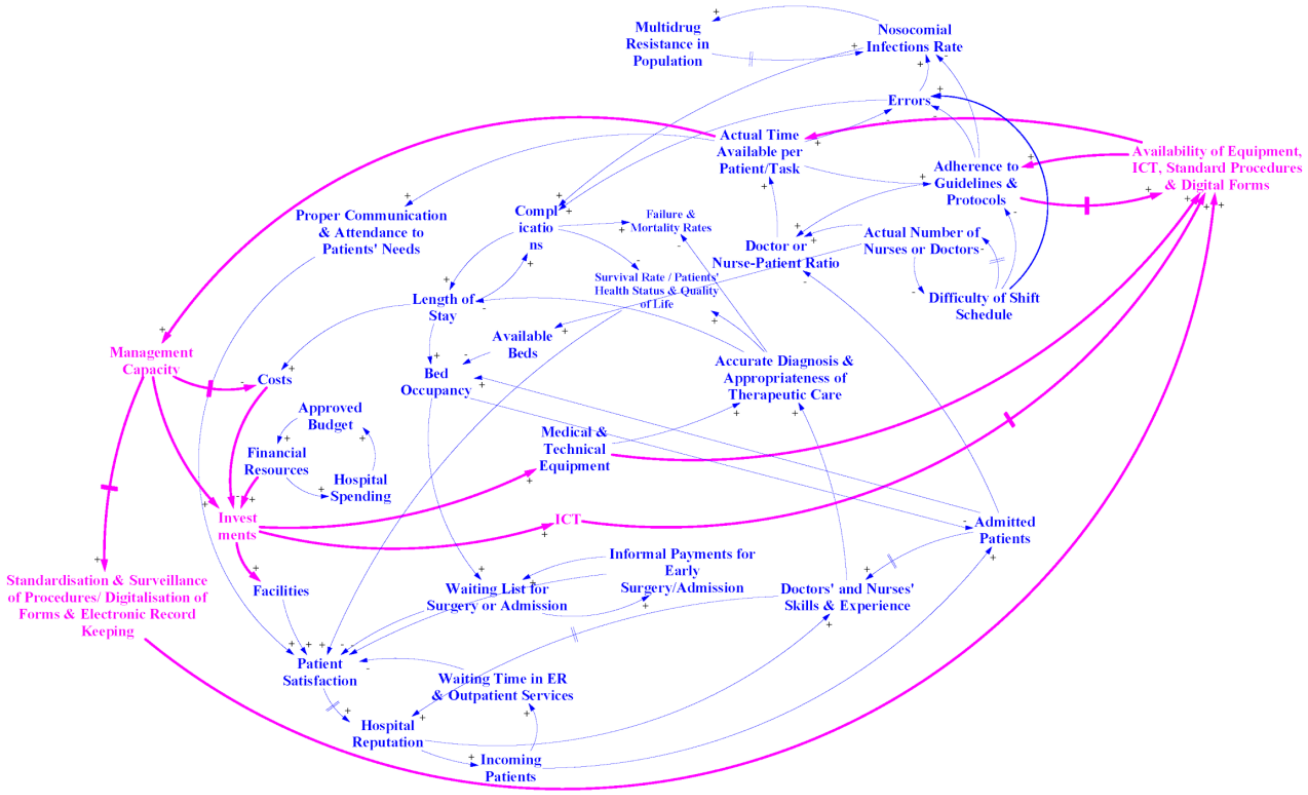
Figure 19. Conceptual Model of Hospital Performance



The *Policy Model of Hospital Performance* is exactly the same as the *Conceptual Model of Hospital Performance*, but extended to incorporate the policy structure. This model incorporates the performance management measures imposed by the Greek government but it depicts not only the actual structure of the system at hand, but also the changes in the system structure which are necessary, according to our participant stakeholders, in order for the performance to improve. It explains what has been happening until now and what actions should be taken in the form of new policies that should be implemented in order for the current situation to change in the

future and for the hospital performance to improve. It is worth mentioning that many of the policy interventions that participants came up with to improve hospital performance are similar to the operational objectives identified in our documents analysis. The *Policy Model of Hospital Performance* is presented in the figure below and is also available in Appendix 22.

Figure 20. Conceptual Model of Hospital Performance – Total Number of Loops



7.5 - Evaluation of the GMB Sessions & Model by the Participants

In order to have a subjective measure to evaluate the impact of the GMB sessions on the understanding of hospital performance by participant stakeholders, we followed Scott et al.'s (2015) suggestion of *"augmenting survey results with more objective measures"* and we used a pretest and a post-test, together with the *CICC*[39] *questionnaire* in order to have an objective measure of validating the outcomes of our GMB Sessions.

We created the pretests (available in Appendix 12) and the posttests (available in Appendix 13) beforehand, and we gave them to the participants right before and right after the GMB sessions respectively to fill them in, so

[39] As a means of better relating, understanding and evaluating GMB process elements and their effects, Vennix et al. (1993, 2000) designed the CICC questionnaire, where each of the four letters represents one of the four scales of the questionnaire, namely: Consensus, Insight, Communication and Commitment to action (CICC). This questionnaire has been shown as an effective way to add validity to the results of GMB projects, serving as an example of a possible standard assessment tool for the method (Rouwette et al., 2011).

that we would be able to observe and evaluate the differences in their answers. Both pretests and posttests consisted of the same two-pages, asking participants the exact same four questions, namely: to describe the main problem related to hospital performance that their department/division is currently facing; its causes; its consequences; and any actions for improvement they could think of.

7.5.1 Initial Understanding of Hospital Performance: Findings from Preliminary Interviews & Pretests conducted before the GMB Sessions

The pretest was a two-pages document (available in Appendix 12a in English) given to the participants before the GMB sessions, asking them to describe the main problem related to hospital performance that their department/division is currently facing; its causes; its consequences; and any actions for improvement they can think of. At the pretests, most participants wrote that the main problem is understaffing, or that understaffing is the cause of the low hospital performance. Although some of them mentioned some other challenges as well, it was clear that in general understaffing was considered responsible by the participants for the low performance. And since recruitment procedures in public hospitals are executed by the Ministry of Health and take many years to complete, hospital stakeholders seemed to believe that there is not much they can do to foster performance. The filled-in pretests (in Greek) can be found in Appendix 29.

Although hospital staff mainly blamed the understaffing for all the negative outcomes, they seemed to recognise that administration and organisation of services plays an important role as well. Our participants also agreed that the new PM policies of the healthcare reform contributed to the reduction of hospital spending, and that a reduction in spending was in fact needed and important, but it has somehow negatively affected hospital performance as well.

7.5.2 Final Understanding of Hospital Performance: Findings from CICC & Posttests conducted after the GMB Sessions

The posttests (available in Appendix 13a in English) were again the same two-pages document given to the participants after the GMB sessions, asking them again to describe the main problem related to low hospital performance that their department/division is currently facing; its causes; its consequences; and any actions for improvement they can think of. As mentioned above, at the pretests almost all the participants wrote that the main problem is understaffing, or that understaffing is the cause of the low performance and that there is not much they can do to combat it, unless more staff is hired by the Ministry of Health. At the posttest, almost none of the participants wrote that understaffing was the main problem. In general, what they wrote at the posttests was much more comprehensive and elaborated than their initial opinion at the pretest. At the posttest, they recognised many different aspects leading to low performance, many different causes and -most importantly- they mentioned quite a few policies to mediate the problem of low hospital performance. This shows that the GMB sessions clearly helped them go deeper, look at the causes of low performance from different aspects and get a more comprehensive view of hospital performance than the one they had before the GMB sessions. The filled-in posttests (in Greek) can be found in Appendix 29.

During the GMB sessions, it turned out that understaffing was indeed part of the model - and part of the problem of low performance - but only "part" of it. The model showed clearly that the low performance is only partially influenced by the understaffing. Participants understood that the variables "doctor or nurse-to-patient ratio" and "actual number of nurses or doctors" were central to the model and, thus, what really matters is how many "active" nurses and doctors (i.e., the ones participating in the shifts schedule) are available and how many patients are admitted. Thus, there are many actions that can be taken to improve performance, e.g., admitting less patients; making more people "active" in the shifts schedule, etc. Those findings are validated also from the CICC[40] questionnaires (available in Appendix 14a in English) filled in by the GMB participants right after the GMB sessions, where participants wrote that, in general, they found the GMB sessions very useful for the understanding of the low hospital performance and for finding *"good enough"* solutions. The filled-in CICC questionnaires (in Greek) can be found in Appendix 29.

7.6 Model Validation

In this section we will discuss the triangulation and the other validation tests performed by the researcher after the GMB sessions in order to validate, calibrate and finalise the models. One of the most important elements of any model-building project is establishing model validity. It is important to note that this process is not in search for "hard" validation. There are two reasons for this. The first reason, rooted at the methodology used, is that no SD model is completely valid because all SD models are simplifications of reality and, thus, fail at representing reality in its riches (Sterman, 2002). SD models created with the GMB approach, in particular, are merely a representation of the mental models of the project participants (Vennix, 1996). The second reason is that the model validity should be considered in relation to the model purpose (Barlas, 1996). Hence, the validity of the model is dependent on the purpose of the model, so that a model is valid if it is useful in explaining the phenomenon under investigation.

In the SD literature, two areas of validation are mentioned: the validation of structure and the validation of the behaviour of the model (Barlas, 1996). Since our model is a qualitative SD model (CLD), behavioural validation is not applicable, as that one refers only to quantitative SD models that can be used for simulations. Therefore, in the present study we only focused on validating the structure of the *Conceptual* and *Policy CLD Models of Hospital Performance*. Three model validation tests were applied: *structure verification* (Forrester & Senge, 1980), *causal clarity* and *variable definition* (Barlas, 1996; Burns & Musa, 2001) tests. Finally, we further validated our *Conceptual* and *Policy CLD Models of Hospital Performance* created by the stakeholders of the case hospital during the GMB sessions through *triangulation* techniques, using our findings from the Literature, Documents Analysis and the Disconfirmatory Interviews with hospital stakeholders of other Greek hospitals.

[40] As a means of better relating, understanding and evaluating GMB process elements and their effects, Vennix et al. (1993, 2000) designed the CICC questionnaire, where each of the four letters represents one of the four scales of the questionnaire, namely: Consensus, Insight, Communication and Commitment to action (CICC). This questionnaire has been shown as an effective way to add validity to the results of GMB projects, serving as an example of a possible standard assessment tool for the method (Rouwette et al., 2011).

Structure Verification

Structure verification aims at verifying the model structure through the comparison of the model with the existing knowledge (Forrester & Senge, 1980). The constructed model should not contradict what we already know about the system. In this GMB project, the model structure was based on mental models of participants who were stakeholders of a Greek public hospital. During the GMB sessions, their mental models were challenged by the mental models of the other participants during the discussions and the process resulted in a commonly agreed final model. Thus, we made sure that all of the variables exist in the real system and originated from the hospital stakeholders.

Furthermore, most of those variables are well-known hospital performance indicators (e.g Bed Occupancy, Complications, Errors, Costs, Doctor or Nurse to Patient Ratio, Failure and Mortality Rates, Length of Stay, Waiting time in ER, etc). Many of them also came up during our scoping review of the international literature around PM, and some of them came up also during the critical review of the literature around the Greek Healthcare reform (e.g., informal payments, nosocomial infections rate, management capacity, facilities, patient satisfaction, etc). Furthermore, the findings of our literature review are in line with the model structure and the model insights, and are in line with the documented negative outcomes documented in the case hospital. Moreover, we specifically searched the international literature for variables and links that assimilate the ones included in our models. Indeed, we verified that all the variables exist in the literature and in reality (under the same or a slightly different name) and that all the causal links included in our model are mentioned (as a relation or correlation stated in the literature) in at least one published scientific paper or book.

Finally, the adequacy of the boundary of the system has been adjusted several times, passing from a *Scoping Model of Hospital Performance* to the *Conceptual Model of Hospital Performance*, then to the *Policy Model of Hospital Performance* and finally to the *Simplified Conceptual Model* that we used for our analysis. Gradually, all the factors that were considered outside of the hospital jurisdiction were eliminated by the group of the GMB participants. The scope was further narrowed as some of the variables and links initially included in the model were eliminated during the disconfirmatory interviews. However, many of the variables eliminated are still implicitly present as constants (i.e., variables with fixed values) inside the model boundary even if not explicitly mentioned, as explained thoroughly in the variable definitions and explanations of each variable, which are available in Appendix 24. For example, the number of doctors and nurses is not one of the model variables; however, it is implicitly present in the model because it represents the denominator of the variable "actual number of doctors and nurses".

Causal Clarity

A test of causal clarity assists the modeller in discerning whether a model tells the story as intended (Burns & Musa, 2001). We argue that our *Conceptual Model of Hospital Performance* is causally clear, for three reasons. First, all variables and all causal links are elicited from the participants stakeholders of the case hospital, and verified by them. Therefore, we can say that the model certainly tells the story of the participant stakeholders and of how they perceive the causes of hospital performance. The development of the CLD lasted two sessions, where

the first session was concerned with model expansion (divergence) and the second session was more focused on convergence, and on verifying each of the causal loops. Although not every participant was fully satisfied with details of the entire model, the loops that were present were clear and necessary to tell the story. Second, the *Conceptual Model of Hospital Performance* was created during the GMB sessions from the participant stakeholders of the case hospital, and was further validated by seven other participant stakeholders from different hospitals in Greece, during disconfirmatory interviews. The last reason why the model has a clear causal story is that most of the participants expressed their gratitude to the researcher after the end of the GMB sessions and stated that the model gave them a new perspective through which to view hospital performance. They said they found the model sufficiently useful for future use in analysing and discussing hospital performance. This is easily inferred also by the pretests and the posttests of the participants, where it is clear that the understanding of hospital performance among the participants was highly increased after the GMB sessions. Finally, it is inferred also by the CICC questionnaires, where participants state that they found the GMB sessions very useful. All those facts clearly show that the model fits its purpose of expressing dynamic causality of hospital performance, making it a clear model to be used by the participants but also by other hospital stakeholders and policy-makers in Greece.

Variable Definition

Variable Definition (Burns & Musa, 2001) is concerned with testing whether the model variables are formulated in a useful way; that is, in a measurable way. We argue that this is the case for our model, as much emphasis was put during the GMB sessions on the variables' definition, explanations and measurability, as well as on the polarity and direction of the causal links of the variables. Hence, all causal links have a clear indication of the direction. The definitions of the variables is also considered to be sufficient as most of them are defined as "the amount of", "the level of", rates or ratios. Some variables however (like health-status for example) are quite intangible and could use some refinement in their expression and definition. However, we left them as they are as participants insisted that they represent what they should represent and no other alternative was collectively accepted by the group. The definitions and explanations of all the model variables and causal links of the *Conceptual* and the *Policy Models of Hospital Performance* can be found in Appendix 24.

Triangulation

Credibility and internal validity of our model (i.e., confidence in the 'truth' of the variables and links) was ensured through: (1) Triangulation[41] (e.g., using many different data sources for ensuring the internal validity of our findings, including our findings from the preliminary and the disconfirmatory interviews, the GMB sessions, the documents analysis and the literature review). The narrative analysis of the open-access and closed-access documents which regarded the Health Ministry's and hospital's performance objectives were used in order to create the *Policy Model of Hospital Performance*, and some of our findings from the critical literature review were

[41] *Triangulation* involves using multiple data sources in an investigation to produce understanding. Rather than seeing triangulation as a method for validation or verification, qualitative researchers generally use this technique to ensure that an account is rich, robust, comprehensive and well-developed. For more details, see: http://www.qualres.org/HomeTria-3692.html

used in order to validate the *Conceptual* as well as the *Policy Model of Hospital Performance*; (2)Negative case analysis[42] and Member-checking[43] (e.g., conducting disconfirmatory interviews to validate and increase confidence in the model, by "disconfirming" variables or links of the model created in the case hospital during the GMB sessions and deleting the causal relations and/ or variables upon which the interviewees disagreed).

Transferability and external validity (i.e., proving that the findings are applicable in other situations as well) of our findings was ensured mainly by the rich, detailed qualitative data and the *Thick Descriptions*[44] of all the model variables, links and loops, which allow the readers interpret the results and see if they can be generalized to other contexts. Although generalizability is not the purpose of qualitative analysis such as ours, we wanted our model to be "universal" for the Greek healthcare context and readily usable by other hospitals and policy-makers in Greece. For this reason, after building the model of hospital performance with the GMB participant stakeholders of the case hospital, we chose to conduct disconfirmatory interviews with seven different stakeholders from seven different public hospitals of different regions and cities of Greece (Heraklion Crete, Sitia, Thessaloniki, Athens, Giannena, Kavala, Kalamata). Those individuals were again public hospital stakeholders who fall into the five main key-stakeholder categories (hospital managers, doctors, nurses, paramedics and patients) and each one of them works or has been hospitalized in a different public hospital. During those interviews, we refined the CLD model of hospital performance according to the interviewees' views, by deleting the causal relations and variables upon which the interviewees disagreed. In this way, we strengthened the external validity of our model and findings, and created a "convergent" and more "universal" version of the *Conceptual Model of Hospital Performance*, including only the variables and loops which all stakeholders from all hospitals agreed upon and found relevant in their cases as well. Finally, we made sure that all the variables and links of our model are documented in the international and/ or the Greek literature (each variable and link is documented in at least one published academic paper), which is a further sign of transferability and external validity.

7.7 Conclusions

Chapter 7 corresponds to the first research question of our study, namely: *How do stakeholders define hospital performance*. To answer this question we conducted the GMB sessions in the case hospital, first in order to help hospital stakeholders gain a better understanding of the low hospital performance they experience in a more systematic way, and second to help them collectively - through structured activities and facilitated discussions - define it; show its trend (dynamic behaviour) in the hospital during the last decade in a diagram

[42] *Negative Case Analysis* is a process for refining an analysis until it can explain or account for a majority of cases. It may be used to revise, broaden or confirm the patterns emerging from data analysis and involves searching for and discussing elements of the data that do not support or appear to contradict patterns or explanations that are emerging from the data analysis. For more details, see: http://www.qualres.org/HomeNega-3694.html

[43] *Member Checks* is when data, analytic categories, interpretations and conclusions are tested with members of those groups from whom the data were originally obtained. This can be done both formally and informally as opportunities for member checks may arise during the normal course of observation and conversation. Typically, member checking is viewed as a technique for establishing to the validity of an account. Lincoln and Guba posit that this is the most crucial technique for establishing credibility. For more details, see: http://www.qualres.org/HomeMemb-3696.html

[44] *Thick description* is described by Lincoln and Guba (1985) as a way of achieving a type of external validity. By describing a phenomenon in sufficient detail one can begin to evaluate the extent to which the conclusions drawn are transferable to other times, settings, situations, and people. For more details, see: http://www.qualres.org/HomeThic-3697.html

(Reference Mode); and conceptualise it as a system, depicted as a qualitative system dynamics model of hospital performance *(CLD - Causal Loop Diagram)*. The two final versions of this CLD Model (i.e., the *Conceptual Model of Hospital Performance* and the *Policy Model of Hospital Performance* available in Appendixes 21 and 22 respectively), which are the main outputs of the GMB sessions, will form the basis of our research analysis and findings of the next chapters.

Hospital performance was defined by the participant stakeholders as the provision of patient-centred care to the patient, with safety (for the patients and the staff); responsibility (adherence to protocols, proportions and procedures) and dignity (nice and clean facilities, access without waiting and without informal payments). The Reference Mode (available in Appendix 19) created and agreed upon by the participants showed that, despite the counterintuitive negative outcomes documented, the level of the overall performance in the case hospital has been slightly increasing (because of the gradual introduction of information systems and quality measures and protocols) after the healthcare reform, but is now stabilizing, as the overall performance is rather low according to the new, updated international standards. Appendix 19 provides evidence and further explanations on the Reference Mode created by the participants during the GMB sessions.

Two different final versions of the model of hospital performance were created by the hospital stakeholders, the *Conceptual Model of Hospital Performance* and the *Policy Model of Hospital Performance* (available in Appendixes 21 and 22 respectively, and thoroughly described in terms of variables and links in Appendix 24), which will form the basis of our research analysis and results of the next chapters. Three model validation tests were applied: the *structure verification* (Forrester & Senge, 1980), the *causal clarity* and the *variable definition* (Barlas, 1996; Burns & Musa, 2001) tests. Finally, we further validated the two CLD Models through *triangulation* techniques, using our findings from the literature, documents analysis and the disconfirmatory interviews with hospital stakeholders of other Greek hospitals. The *Conceptual Model of Hospital Performance* (which will be analytically discussed in chapters 8 and 9) is a CLD model that depicts the actual structure of the system at hand and can be used to explain the current low performance. It shows what has been happening until now, according to the participant stakeholders, and what will continue to happen if actions are not taken; if no different policies are implemented that would change the structure of the system. The *Policy Model of Hospital Performance* (which will be analytically discussed in chapter 11) is exactly the same as the *Conceptual Model of Hospital Performance*, but extended to incorporate the policy structure, i.e., the changes in the system structure which are necessary, according to our participant stakeholders, in order to improve performance. The *Policy Model of Hospital Performance* explains not only what has been happening until now, but also what actions should be taken in the form of new policies that should be implemented in order for the case hospital performance to improve.

Furthermore, in this chapter we evaluated the value of the GMB sessions and of the CLD Models for the participants, by comparing the initial versus the final understanding of the participant stakeholders around hospital performance. More explicitly, we used our findings from the Preliminary Interviews & pretests conducted before the GMB sessions to report the initial understanding of hospital performance, and the findings from the CICC questionnaires and the posttests, conducted after the GMB sessions, to report the final understanding of hospital performance. At the pretests, almost all the participants wrote that the main cause of low performance is

understaffing and that, in order for the performance to improve, more staff should be hired by the Ministry of Health. At the posttest, what they wrote was much more comprehensive and elaborated than that, as they recognised many different aspects leading to low performance, many different causes and -most importantly- they mentioned quite a few policies to improve performance, which clearly proves the value of our approach, of our model and of the GMB sessions in augmenting their understanding around performance. The filled-in posttests (in Greek) can be found in Appendix 29.

The model clearly showed that the low performance is only partially influenced by the understaffing. Participants understood that the variables "doctor or nurse-to-patient ratio" and "actual number of nurses or doctors" were central to the model and, thus, what really matters is how many "active" nurses and doctors (i.e., the ones participating in the shifts schedule) are available and how many patients are admitted. Thus, there are many actions that can be taken to improve performance, e.g., admitting less patients; making more people "active" in the shifts schedule, etc. Those findings are validated also from the CICC questionnaires (available in Appendix 14a in English) filled in by the GMB participants right after the GMB sessions, where participants wrote that, in general, they found the GMB sessions very useful for the understanding of the low hospital performance and for finding *"good enough"* solutions. The filled-in CICC questionnaires (in Greek) can be found in Appendix 29.

CHAPTER 8 – CONCEPTUAL MODEL ANALYSIS

Chapter 8 corresponds to the second research question of our study, namely: *What are the main feedback loops driving hospital performance, as perceived by stakeholders.* In order to answer this question, in chapter 8 we analyse the structure of a simplified version of the *Conceptual Model of Hospital Performance* that the GMB participant stakeholders created, in terms of model loops. As the original model that our participants created (available in Appendix 21) contains a significant number of loops, and it is impossible to explicitly present and discuss all of them, the researcher created a simplified version by erasing some of the variables and causal links, in order to make it possible to identify and analyse the most basic feedback loops of the model. In section 8.1 we present this *Simplified Conceptual Model of Hospital Performance*, we explain how we created it, and then we go on to present and explain the reinforcing and the balancing feedback loops identified in this *Simplified Conceptual Model* in the next two sections. The reader of this chapter should have in mind the *Conceptual Model of Hospital Performance* (available in Appendix 21) and turn to the models' documentation (available in Appendix 24) every time that something is not clear. In Appendix 24, all the model variables and causal links of all the CLD models we created (*Conceptual Model of Hospital Performance, Simplified Conceptual Model of Hospital Performance, Policy Model of Hospital Performance*) are analytically presented, explained and discussed.

8.1 The Simplified Conceptual Model

As the original *Conceptual Model of Hospital Performance* that participant stakeholders built includes a significant number of loops (as shown on Figure 21 below), it is not possible to explicitly present and discuss all of them. Moreover, when we add the policy structure to our model, the number of loops increases remarkably (see Figure 22). On Figures 21 and 22 it is shown how many loops each of the model variables participates in, which is automatically calculated by the Vensim Software. For this reason, we created a simplified version of the *Conceptual Model of Hospital Performance* by erasing some of the variables and causal links and by keeping only the most important ones, in order to make it possible to analyse the most basic mechanisms of the model structure. In this section we will present and analyse all the loops of this *Simplified Conceptual Model of Hospital Performance*, by giving a name for each loop and showing the model variables that the loop includes. Then we will discuss if the loop is a *reinforcing* or a *balancing* one and we will analytically explain how each loop operates.

In order to simplify the *Conceptual Model of Hospital Performance*, reduce its total number of loops and make it easier to analyse it properly, we erased the following four variables:

(1) ***Bed Occupancy*** (i.e., the number of *Admitted Patients* multiplied by their *Length of Stay* (in days) during a certain period of time and divided by the number of *Available Beds* multiplied by that period of time in days)

(2) ***Available Beds*** (i.e., the number of "active" beds depending on the *Actual Number of Nurses or Doctors*)

(3) ***Actual Number of Nurses or Doctors*** (i.e., the number of "active" nurses or doctors who are placed at the clinics, directly treating patients and participating in the shifts and overnights schedule of their clinic)

Figure 21. Conceptual Model of Hospital Performance – Total Number of Loops: more than 36

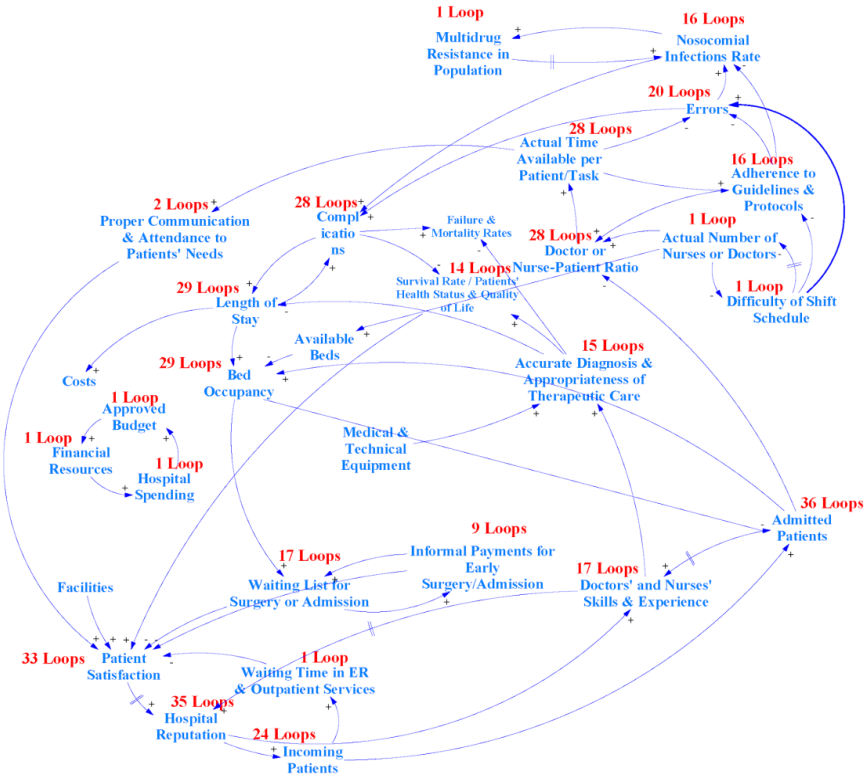
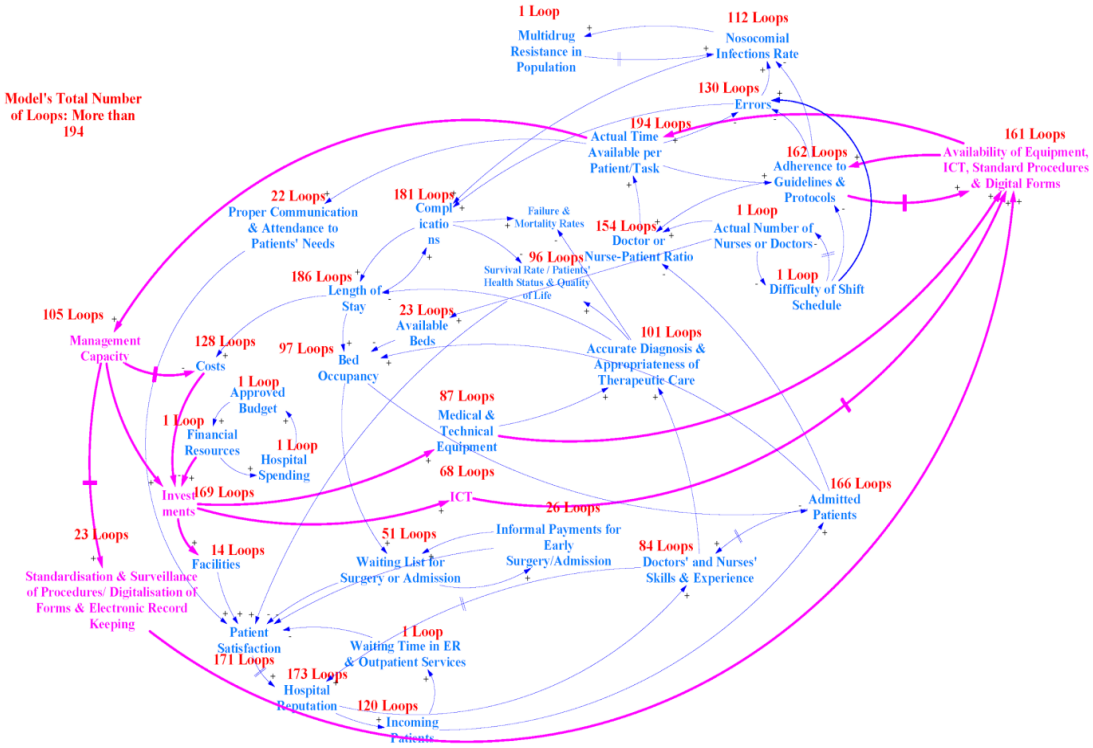


Figure 22. Policy Model of Hospital Performance – Total Number of Loops: more than 194



(4) ***Difficulty of Shift Schedule*** (i.e., the level of inconvenience of the staff's Shifts and overnights Schedule).

Although they are quite important, we decided to exclude them from the Simplified Conceptual Model as those four variables together form a subsystem which refers to internal processes of staffing and staff management; a subsystem which could be analysed separately, and then be added in the performance model as a separate branch. More specifically, *Available Beds* and *Actual Number of Nurses or Doctors* are two variables that convert a phenomenally constant number (i.e., the number of hospital beds and the numbers of doctors and of nurses) into a variable sum. The *Actual Number of Nurses or Doctors* is not stable but dynamically changes depending on the absences and the maternity or sick leaves of the doctors and nurses - which is influenced by the *Difficulty of Shift Schedule*. That is why we also excluded the variable *Difficulty of Shift Schedule.* Seemingly, the number of the *Available Beds* in clinics and ICUs as well as the number of available surgical banks is not stable, but it dynamically changes depending on the number of the "active" nurses and doctors, who are present at the hospital (not on some kind of leave) and are actively participating in the shifts and overnights schedule of the clinics. The fact that we exclude *Available Beds* and *Actual Number of Nurses or Doctors* from the *Simplified Conceptual Model*, leaves the model with two constant numbers in the place of those two variables, which makes it simpler to analyse. *Bed Occupancy* is excluded because it is highly connected to this staffing subsystem, and thus should better be integrated there.

In order to further simplify the model, from the remaining variables we deleted six causal links. Although important, those six links represent processes that are either slow or not central to the issues of performance that our case hospital currently faces. Thus, omitting them did not make a decisive difference to the model, but it made it much more comprehensive and easier to analyse. Those six links that we deleted were the following:

(1) Adherence to Guidelines & Protocols → Availability of Equipment, ICT, Standard Procedures & Digital Forms

The participant stakeholders of our GMB sessions agreed that *Adherence to Guidelines & Protocols* leads to the increase of the *Availability of Equipment, ICT, Standard Procedures & Digital Forms* in the long run. This is because the existence and adherence of guidelines & protocols in the hospital "pushes" in the long run for the specification and acquisition of the necessary medical equipment and for the standardisation of procedures (internal regulations; nurses' duties; work distribution and shift schedules that respect the necessary rests; safety measures, etc.) to be created and implemented.

(2) *Adherence to Guidelines & Protocols → Doctor or Nurse-Patient Ratio*

The participant stakeholders of our GMB sessions agreed that *Adherence to Guidelines & Protocols* leads to the increase of the *Doctor or Nurse-Patient Ratio*. This is because the adherence to international guidelines "pushes" for the right proportions of doctors or nurses in respect to patients admitted to be respected (i.e., an Indicated *Doctor or Nurse-Patient Ratio*).

(3) *Adherence to Guidelines & Protocols → Errors*

The participant stakeholders of our GMB sessions agreed that *Adherence to Guidelines & Protocols* leads to the decrease of *Errors*. This is because the higher the adherence to medical and nursing guidelines and protocols, the

more appropriate the patients handling will be, the more measures and precautions are taken by the hospital staff for the safety of the staff and of the patients and the more *Errors* will be avoided.

(4) *Errors → Nosocomial Infections Rate*

The participant stakeholders of our GMB sessions agreed that *Errors* lead to the increase of *Nosocomial Infections Rate*. This is because some of the medical and nursing staff's *Errors* (e.g., improper sterilization of catheters and surgical equipment) directly causes infections (i.e., urinary tract infections and surgical site infections respectively) to the patients.

(5) *Management Capacity → Costs*

The participant stakeholders of our GMB sessions agreed that increased *Management Capacity* leads to the decrease of *Costs* in the long run. This is because increased *Management Capacity* of the permanent employees of the hospital would eliminate the need for extra personnel (i.e., personnel hired under fixed-term contracts of employment to help with the management responsibilities of the hospital managers that are not fulfilled) who is paid from the *Approved Budget*, creating one of the biggest sources of cost for the hospital.

(6) Hospital Reputation → Doctors' and Nurses' Skills & Experience

The participant stakeholders of our GMB sessions agreed that a good *Hospital Reputation* leads to the increase of *Doctors' and Nurses' Skills & Experience*. This is because when a hospital has a good reputation, high quality doctors are attracted to come and work with the other considerably good doctors of the hospital, bringing their education, skills & experience to the hospital assets.

After eliminating all the above-mentioned variables and causal links, our *Simplified Conceptual Model of Hospital Performance* was formed, as shown on figure 23 (available also in Appendix 23). This simplified model is suitable for analysing and drawing some clear conclusions from, as it contains only eleven loops (seven reinforcing and four balancing ones), which we present and analyse in the next sections of this chapter.

8.2 Reinforcing Loops

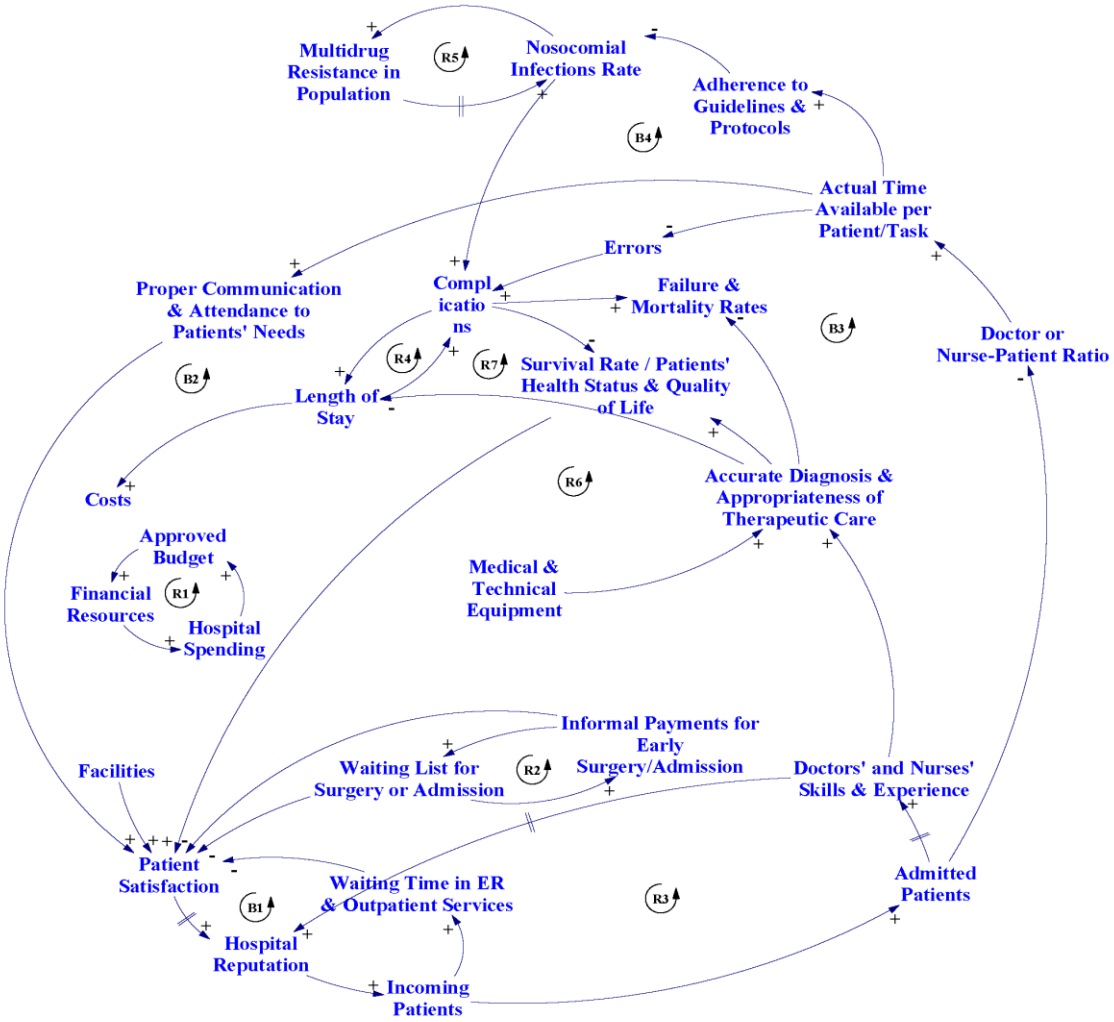
A *Feedback Loop* in a system arises when a shift of a variable causes a circular shift in other variables and eventually feeds back to trigger further change in the initial variable. If that further change is in the same direction as the initial change, then the loop is known as "positive" or "reinforcing". However, positive feedback loops are not always "good" for the hospital performance (Senge, 1990; Senge & Forrester, 1980). Furthermore, in system dynamics, and in systems' analysis in general, the starting point of a system (i.e., the initial values of the variables that represent "stocks", such as assets or resources) is important. Thus, we start our analysis of the reinforcing loops below from the fact that, currently, our case hospital is among the ones that have a good reputation, and thus it is currently facing increasing volumes of incoming patients, leading to increased waiting times and waiting lists.

R1 – Budgetary Control & Cutback Management

(*Approved Budget-Financial Resources-Hospital Spending*)

A cut of the approved Hospital Budget leads to the decrease of *Financial Resources* available, which is quite intuitive as the higher the *Approved Budget*, the more money the hospital manager has in his disposition "legally" to allocate to the different departments and cover needs. Increased *Financial Resources* in turn lead to the increase of *Hospital Spending*, because the more the *Financial Resources* that hospital managers have in their disposition, the more they are motivated to spend. Increased *Hospital Spending* in turn leads to the increase of the *Approved Budget* in the long term, and the other way around (decreased *Hospital Spending* leads to the decrease of the *Approved Budget* in the long term). This happens because of the current policy of the Ministry of Health, according to which the budget of the next fiscal year is issued according to the past year's spending. Given the current policies of Cutback Management in place, loop R1 – Budgetary Control & Cutback Management is catastrophic for hospital performance in the long run, as it leads to a perpetual decrease of financial resources and purchasing power in the long run, leading to a lack of capacity by public hospitals to cover their needs.

Figure 23. Simplified Conceptual Model of Hospital Performance & Model Loops



R2 – Informal Payments & Corruption

(*Informal Payments for early Surgery/Admission - Waiting List for Surgery or Admission*)

Long Waiting Lists for Surgery or Admission lead to the increase of the *Informal Payments for early Surgery/Admission*. This happens because, according to our participants, most of the patients do not like to wait long times for having an elective surgery or a necessary treatment, but most importantly because - depending also on the severity of their condition - they might feel that their health will deteriorate if they wait. Thus, they commit to paying the doctors out-of-pocket, thinking that they will not get timely and appropriate treatment unless they do it. Increased rates of *Informal Payments for early Surgery/Admission*, in turn, lead back to the increase of the *Waiting List for Surgery or Admission*. This is logical, as before calling a patient on the waiting list to be admitted for a surgery, transplant or ICU, administrative staff needs to make sure that there are surgical banks as well as beds available in ICU and at the corresponding clinic. If some patients are characterised as "urgent cases" and are being given priority after giving informal payments to doctors, then all the rest of the patients on the waiting list will have to wait more time than otherwise and, in the meanwhile, more patients are being placed on the waiting list, making it even bigger and increasing the average waiting time for all the patients on the list. Given the long waiting lists that are already in place in all Greek public hospitals as a result of the current policies, and given the widespread idea between patients that informal payments are necessary for a timely and proper treatment, loop R2 – Informal Payments & Corruption is catastrophic for public health in the long run, as it leads to a perpetual increase of private spending on healthcare and to the outspread of corruption between public hospital doctors.

R3 - Doctors' and Nurses' Skills Building

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctors' and Nurses' Skills & Experience*)

A good *Hospital Reputation* leads to the increase of the rate of *Incoming Patients*. Obviously, a hospital with a good reputation is more likely to be chosen by patients who have no other specific preferences (i.e., preferences for a specific doctor, in which case they are obliged to visit the hospital where this doctor works and be treated there) for their routine controls or for a minor surgery or treatment. A high rate of *Incoming Patients,* in turn, leads to the increase of the number of *Admitted Patients*, because the more the *Incoming Patients*, the more will be the scheduled admissions, and the more will be the *Admitted Patients*. An increase of *Admitted Patients* in turn leads to the increase of *Doctors' and Nurses' Skills & Experience*, as the more the patients that are admitted and under treatment, the more cases nurses and doctors have to work on, and the more experience and skills they will gain. Finally, increased *Doctors' and Nurses' Skills & Experience* leads back to the increase of the *Hospital Reputation* in the long term, because the reputation of the doctors' and nurses' skills and experience builds on the *Hospital Reputation* through the word of mouth. Loop R3 - Doctors' and Nurses' Skills Building leads to a perpetual increase of skills mix and reputation for the already successful hospitals in the long run, and to a perpetual decrease for the currently unsuccessful ones; a well-known phenomenon in the system's literature known as the *Success to the Successful* archetype (Senge, 1990). Thus, loop R3 - Doctors' and Nurses' Skills Building is beneficial for big,

urban hospitals that are generally better staffed and equipped, whereas catastrophic for the small, rural hospitals' performance in the long run.

R4 - Length of Stay & Complications

(*Length of Stay – Complications*)

A longer *Length of Stay* leads to the increase of *Complications*. This is because *Length of Stay* augments the chances that *Complications* occur: the more time the inpatient is being treated, the more become the chances that he/she gets a nosocomial infection or that he/she becomes subject to an error of the medical staff. More *Complications*, in turn, lead back to an even longer *Length of Stay*. This is because *Complications* deteriorate the patient's health state and oblige him/her to stay more time admitted until he/she recovers. Loop R4 - Length of Stay & Complications highlights the need for a short Length of Stay to avoid complications.

R5 – Multidrug Resistance in the General Population

(*Multidrug Resistance in Population - Nosocomial Infections Rate*)

A high *Nosocomial Infections Rate* leads to the increase of *Multidrug Resistance in Population*. This is because the higher the *Nosocomial Infections Rate*, the more patients will be infected by resistant pathogens and – the ones who will not die – will be colonised and discharged. The more the colonised patients in the community, the higher the multidrug resistance in the general population, which, in turn, leads back to the further increase of *Nosocomial Infections Rate*. This is because the higher the *Multidrug Resistance in Population*, the more the colonised patients that will be admitted in the hospital and the more the possibilities that they will infect other patients there, pushing the *Nosocomial Infections Rate* higher than otherwise. Loop R5 – Multidrug Resistance in the General Population highlights the need for limiting *Nosocomial Infections Rate* using appropriate measures, in order to reduce multidrug resistance in the general population.

R6 – Clinical Efficiency & Hospital Reputation

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctors' and Nurses' Skills & Experience - Accurate Diagnosis & Appropriateness of Therapeutic Care - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction*)

A good *Hospital Reputation* leads to the increase of the rate of *Incoming Patients*. Obviously, a hospital with a good reputation is more likely to be chosen by patients who have no other specific preferences (i.e., preferences for a specific doctor, in which case they are obliged to visit the hospital where this doctor works and be treated there) for their routine controls or for a minor surgery or treatment. A high rate of *Incoming Patients* in turn leads to the increase of the number of *Admitted Patients*. This is because the more the *Incoming Patients*, the more will be the scheduled admissions, and the more will be the *Admitted Patients*. Increased *Admitted Patients* in turn lead to the increase of *Doctors' and Nurses' Skills & Experience*, as the more the patients that are admitted under treatment, the more cases nurses and doctors have to work on, and the more experience and skills they will gain. Higher *Doctors' and Nurses' Skills & Experience* lead to the increase of the *Accurate Diagnosis &*

Appropriateness of Therapeutic Care for patients, as the better the quality of doctors, the better the chances for a correct diagnosis and, subsequently, for an appropriate treatment; and the better the quality of nurses, the better the therapeutic care provided for the patient. *Accurate Diagnosis & Appropriateness of Therapeutic Care* in turn leads to the increase of the *Survival Rate / Patients' Health Status & Quality of Life*, because getting the right diagnosis means that patients are provided with the right treatment for their condition and will survive a fatal condition, or that they will be able to treat a condition that would deteriorate their quality of life if it remained undiagnosed or improperly treated. High *Survival Rate / Patients' Health Status & Quality of Life* leads to the increase of *Patient Satisfaction*. Although patients cannot evaluate the appropriateness of treatment and diagnosis, they can - and they often do - evaluate the outcome of the treatment and their quality of life after discharge (i.e., their overall level of health, pain and functionality after treatment in comparison to before treatment, and in comparison to other similar cases). High *Patient Satisfaction* in turn leads to the increase of the *Hospital Reputation*. This is because patients who are satisfied from their experience and treatment at a hospital are likely to return there for a future treatment regarding themselves or their family members, as well as to express this satisfaction to their contacts and spread this good opinion through word of mouth. Loop R6 – Clinical Efficiency & Hospital Reputation leads to a perpetual increase of clinical efficiency, accumulated intellectual and skills capital, reputation for the already successful hospitals in the long run, and to a perpetual decrease for the currently unsuccessful ones; a well-known phenomenon in the system's literature known as the *Success to the Successful* archetype (Senge, 1990). Thus, loop R6 – Clinical Efficiency & Hospital Reputation is beneficial for big, urban hospitals that are generally better staffed and equipped, whereas catastrophic for the small, rural hospitals' performance in the long run.

R7 – Complications & Hospital Reputation

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctors' and Nurses' Skills & Experience - Accurate Diagnosis & Appropriateness of Therapeutic Care - Length of Stay – Complications - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction*)

A good *Hospital Reputation* leads to the increase of the rate of *Incoming Patients*. Obviously, a hospital with a good reputation is more likely to be chosen by patients who have no other specific preferences (i.e., preferences for a specific doctor, in which case they are obliged to visit the hospital where this doctor works and be treated there) for their routine controls or for a minor surgery or treatment. A high rate of *Incoming Patients* in turn leads to the increase of the number of *Admitted Patients*. This is because the more the *Incoming Patients*, the more will be the scheduled admissions, and the more will be the *Admitted Patients*. Increased *Admitted Patients* in turn lead to the increase of *Doctors' and Nurses' Skills & Experience*, as the more the patients that are admitted under treatment, the more cases nurses and doctors have to work on, and the more experience and skills they will gain. Higher *Doctors' and Nurses' Skills & Experience* lead to the increase of the *Accurate Diagnosis & Appropriateness of Therapeutic Care* for patients, as the better the quality of doctors, the better the chances for a correct diagnosis and, subsequently, for an appropriate treatment; and the better the quality of nurses, the better the therapeutic care provided for the patient. *Accurate Diagnosis & Appropriateness of Therapeutic Care* leads to

the decrease of the *Length of Stay*, because getting the right diagnosis means that patients are provided with the right treatment for their condition right away, which means that they will get better soon and will be dismissed earlier. A shorter *Length of Stay* in turn leads to the decrease of *Complications*. This is because a longer *Length of Stay* augments the chances that *Complications* occur: the more time the inpatient is being treated, the more become the chances that he/she gets a nosocomial infection or that he/she becomes subject to an error of the medical staff. Less *Complications* in turn lead to the increase of *Survival Rate / Patients' Health Status & Quality of Life*, because *Complications* during hospital treatment might cause long-term disabilities and chronic conditions to the patient. High *Survival Rate / Patients' Health Status & Quality of Life* leads to the increase of *Patient Satisfaction*. Although patients cannot evaluate the appropriateness of treatment and diagnosis, they can - and they often do - evaluate the outcome of the treatment and their quality of life after discharge (i.e., their overall level of health, pain and functionality after treatment in comparison to before treatment and in comparison to other similar cases). High *Patient Satisfaction* in turn leads to the increase of the *Hospital Reputation*. This is because patients who are satisfied from their experience and treatment at a hospital are likely to return there for a future treatment regarding themselves or their family members, as well as to express this satisfaction to their contacts and spread this good opinion through word of mouth. Exactly as Loop R6, Loop R7 – Complications & Hospital Reputation leads to a perpetual increase of clinical efficiency, accumulated intellectual and skills capital, reputation for the already successful hospitals in the long run, and to a perpetual decrease for the currently unsuccessful ones; a well-known phenomenon in the system's literature known as the *Success to the Successful* archetype (Senge, 1990). Thus, loop R7 – Complications & Hospital Reputation is beneficial for big, urban hospitals that are generally better staffed and equipped, whereas catastrophic for the small, rural hospitals' performance in the long run.

8.3 Balancing Loops

A Feedback Loop in a system arises when a shift of a variable causes a circular shift in other variables and eventually feeds back to trigger further change in the initial variable. If that further change is in the opposite direction to the initial change, then the loop is called "negative" or "balancing". However, negative feedback loops are not always "bad" for the hospital performance (Senge, 1990; Senge & Forrester, 1980). As in the section 8.2, we start our analysis of the balancing loops below from the fact that, currently, our case hospital is among the ones that have a good reputation, and thus it is currently facing increasing volumes of incoming patients, leading to increased waiting times and waiting lists.

B1 – Word of Mouth & Waiting Times

(*Hospital Reputation - Incoming Patients - Waiting Time in ER & Outpatient Services - Patient Satisfaction*)

A good *Hospital Reputation* leads to the increase of the rate of *Incoming Patients*, as a hospital with a good reputation is more likely to be chosen by patients for their routine controls or for a minor surgery or treatment. A high rate of *Incoming Patients* in turn leads to the increase of the *Waiting Time in ER & Outpatient Services*. This

is because the more the *Incoming Patients* at a certain period (e.g., a day in the ER), the more work for a fixed number of nurses and doctors will it be and – since they cannot all together be examined at once – the more they will need to wait. This applies not only to waiting in the Emergency Room (where Greek patients might need to wait for many hours or days to be examined) but also to the outpatient services of the hospital, where patients call in advance and book an appointment and might need to wait for months or even year(s) for the first appointment available. Longer *Waiting Time in ER & Outpatient Services*, in turn, leads to the decrease of *Patient Satisfaction*, which is quite logical as nobody likes long queues and long waiting times to be examined. Especially when it comes to being in the ER for an emergency, waiting can be fatal. Finally, low *Patient Satisfaction* leads to the decrease of the *Hospital Reputation* in the long run, because patients are likely to express their low satisfaction to their contacts through word of mouth, affecting the *Hospital Reputation* negatively. Loop B1 – Word of Mouth & Waiting Times leads to a gradual decrease and stabilisation of patient satisfaction and hospital reputation for the already successful hospitals in the long run; a well-known phenomenon in the system's literature known as the *Limits to Success archetype* (Senge, 1990). Thus, Loop B1 – Word of Mouth & Waiting Times shows that, paradoxically, a good hospital reputation is both a blessing and a curse, doomed to be deteriorated because of the adverse effect of long waiting times that is inevitably generated in the hospital, causing the overall hospital performance to decrease.

B2 – Patient Satisfaction & Attendance to Patients' Needs

(Hospital Reputation - Incoming Patients - Admitted Patients - Doctor or Nurse-Patient Ratio - Actual Time Available per Patient/Task - Communication & Attendance to Patients' Needs - Patient Satisfaction)

A good *Hospital Reputation* leads to the increase of the rate of *Incoming Patients*. Obviously, a hospital with a good reputation is more likely to be chosen by patients for their routine controls or for a minor surgery or treatment. A high rate of *Incoming Patients* in turn leads to the increase of the number of *Admitted Patients* and this, in turn leads to the decrease of the *Doctor or Nurse-Patient Ratio*, because this ratio is formed by the number of active nurses or doctors (nominator) to the number of *Admitted Patients* (denominator) and, as the denominator increases, the ratio decreases. A low *Doctor or Nurse-Patient Ratio* leads to the decrease of the *Actual Time Available per Patient/Task*, as the "active" doctors and nurses are less than they should, in respect to the number of patients. Those few workers are, however, the ones who have to carry the burden of all the admitted patients, which means that they have much more patients to treat during their 8-hours shift than they should have, thus the real time that they can devote to each patient decreases. Decrease of the *Actual Time Available per Patient/Task* in turn leads to the decrease of the *Proper Communication & Attendance to Patients' Needs*. This is because the more the net time that doctors and nurses have available to dedicate to each patient, the more "present" and "responsive" nurses and medical staff will be to each patients' needs and the more the time they will spend with each one of them, answering their questions and giving them information and instructions regarding their condition, treatment and personal care. Less *Proper Communication & Attendance to Patients' Needs* leads to the decrease of *Patient Satisfaction*, because a polite behaviour, a good communication and the attendance to their needs by the medical and nursing staff are largely what patients perceive as "good hospital treatment". This is also what they usually

have in mind when evaluating their hospitalisation experiences in the various Patient satisfaction questionnaires, because patients are not able – unless they are doctors themselves - to evaluate the appropriateness of treatment and diagnosis, or the medical and scientific integrity of doctors and nurses. Finally, low *Patient Satisfaction* leads to the decrease of the *Hospital Reputation*, because patients are likely to express their low satisfaction to their contacts through word of mouth, affecting the *Hospital Reputation* negatively. Exactly as Loop B1, Loop B2 – Patient Satisfaction & Attendance to Patients' Needs leads to a gradual decrease and stabilisation of patient satisfaction and hospital reputation for the already successful hospitals in the long run; a well-known phenomenon in the system's literature known as the *Limits to Success archetype* (Senge, 1990). Thus, Loop B2 – Patient Satisfaction & Attendance to Patients' Needs shows that, paradoxically, a good hospital reputation is both a blessing and a curse, doomed to be deteriorated because of the adverse effect of less attendance to patients' needs that is inevitably generated in the hospital, causing the overall hospital performance to decrease.

B3 - Actual Time Available & Errors

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctor or Nurse-Patient Ratio - Actual Time Available per Patient/Task – Errors – Complications - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction*)

A good *Hospital Reputation* leads to the increase of the rate of *Incoming Patients*. Obviously, a hospital with a good reputation is more likely to be chosen by patients for their routine controls or for a minor surgery or treatment. A high rate of *Incoming Patients* in turn leads to the increase of the number of *Admitted Patients* and this, in turn leads to the decrease of the *Doctor or Nurse-Patient Ratio*, because this ratio is formed by the number of active nurses or doctors (nominator) to the number of *Admitted Patients* (denominator) and, as the denominator increases, the ratio decreases. A low *Doctor or Nurse-Patient Ratio* leads to the decrease of the *Actual Time Available per Patient/Task*, as the "active" doctors and nurses are less than they should, in respect to the number of patients. Those few workers are, however, the ones who have to carry the burden of all the admitted patients, which means that they have much more patients to treat during their 8-hours shift than they should have, thus the real time that they can devote to each patient decreases. Decrease of the *Actual Time Available per Patient/Task* in turn leads to the increase of *Errors*. This is because the more the *Actual Time Available per Patient/Task*, the more the time that doctors and nurses have available to spend with each patient, answering his/her questions and giving him and his carers information and instructions regarding his/her condition, treatment and personal care from their experience. Subsequently, usual patients' *Errors* which create *Complications* or unexpected readmissions will be avoided. Furthermore, the more the time medical and nursing staff spends with each patient, the better they will get to know and remember the condition of each patient and the less will be the medical and nursing staff's *Errors* due to miscommunication or insufficient attendance to patients. Increase of *Errors*, in turn, lead to the increase of *Complications*. This is because personnel's or patients' and carers' *Errors* (e.g., mistaken dosage of the right medicine or wrong medicine) directly cause *Complications* to the patient, sometimes serious or fatal ones. More *Complications*, thus, lead to the decrease of *Survival Rate / Patients' Health Status & Quality of Life*, because *Complications* during hospital treatment might cause long-term disabilities and chronic conditions to the patient

– or even death. Low *Survival Rate / Patients' Health Status & Quality of Life* leads to the decrease of *Patient Satisfaction*. Although patients cannot evaluate the appropriateness of treatment and diagnosis, they can - and they often do - evaluate the outcome of the treatment and their quality of life after discharge (i.e., their overall level of health, pain and functionality after treatment, in comparison to before treatment, and in comparison to other similar cases). High *Patient Satisfaction* in turn leads to the increase of the *Hospital Reputation*. This is because patients who are satisfied from their experience and treatment at a hospital are likely to return there for a future treatment regarding themselves or their family members, as well as to express this satisfaction to their contacts and spread this good opinion through word of mouth. Exactly as Loop B1 and B2, Loop B3 - Actual Time Available & Errors leads to a gradual decrease and stabilisation of patient satisfaction and hospital reputation for the already successful hospitals in the long run; a well-known phenomenon in the system's literature known as the *Limits to Success archetype* (Senge, 1990). Thus, Loop B3 - Actual Time Available & Errors shows that, paradoxically, a good hospital reputation is both a blessing and a curse, doomed to be deteriorated because of the adverse effect of more errors that is inevitably generated in the hospital, causing the overall hospital performance to decrease.

B4 - Actual Time Available & Adherence to Guidelines & Protocols

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctor or Nurse-Patient Ratio - Actual Time Available per Patient/Task - Adherence to Guidelines & Protocols - Nosocomial Infections Rate – Complications - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction*)

A good *Hospital Reputation* leads to the increase of the rate of *Incoming Patients*. Obviously, a hospital with a good reputation is more likely to be chosen by patients for their routine controls or for a minor surgery or treatment. A high rate of *Incoming Patients* in turn leads to the increase of the number of *Admitted Patients* and this, in turn leads to the decrease of the *Doctor or Nurse-Patient Ratio*, because this ratio is formed by the number of active nurses or doctors (nominator) to the number of *Admitted Patients* (denominator) and, as the denominator increases, the ratio decreases. A low *Doctor or Nurse-Patient Ratio* leads to the decrease of the *Actual Time Available per Patient/Task*, as the "active" doctors and nurses are less than they should, in respect to the number of patients. Those few workers are, however, the ones who have to carry the burden of all the admitted patients, which means that they have much more patients to treat during their 8-hours shift than they should have, thus the real time that they can devote to each patient decreases. Decrease of the *Actual Time Available per Patient/Task* in turn leads to the decrease of *Adherence to Guidelines & Protocols*. This is mainly because, in their mind, following guidelines is "a more time-consuming way of doing things"; thus, the more the time they have available to finish all their tasks during their shift, the more willing they are to allocate some time on following the guidelines – provided, of course, that they already know how to do that, and have been fully educated and trained to the implementation of those guidelines and protocols. Even if they know that they should be doing this task differently to be consistent with the guidelines, they might decide not to do it in the proper way, in order to earn some time and finish their shift on time. Low *Adherence to Guidelines & Protocols* in turn leads to the increase of *Nosocomial Infections Rate*. This is because adherence to guidelines, measures, nursing and medical protocols ensures among others Appropriate Patients handling, appropriate Material & Waste Management, adequate staff's vaccination coverage,

and other measures and precautions which could limit the spread of *Nosocomial Infections Rate*. High levels of Nosocomial *Infections Rate* lead to the increase of *Complications*, because the higher the Hospital's *Nosocomial Infections Rate*, the more are the chances that a patient gets infected in a given time period. More *Complications* lead to the decrease of *Survival Rate / Patients' Health Status & Quality of Life*, because *Complications* during hospital treatment might cause long-term disabilities and chronic conditions to the patient (or even death). Lower *Survival Rate / Patients' Health Status & Quality of Life* in turn leads to the decrease of *Patient Satisfaction*, as patients often evaluate the outcome of the treatment and their quality of life after discharge, and satisfied patients are more likely to spread this good opinion through word of mouth, leading to better *Hospital Reputation*. Exactly as Loop B1, B2 and B3, Loop B4 - Actual Time Available & Adherence to Guidelines & Protocols leads to a gradual decrease and stabilisation of patient satisfaction and hospital reputation for the already successful hospitals in the long run; a well-known phenomenon in the system's literature known as the *Limits to Success archetype* (Senge, 1990). Thus, Loop B4 - Actual Time Available & Adherence to Guidelines & Protocols shows that, paradoxically, a good hospital reputation is both a blessing and a curse, doomed to be deteriorated because of the adverse effect of limited adherence to guidelines & protocols that is inevitably generated in the hospital, causing the overall hospital performance to decrease.

8.4 Conclusions

Chapter 8 corresponds to the second research question of our study, namely: *What are the main feedback loops driving hospital performance, as perceived by stakeholders.* In order to answer this question, in chapter 8 we analysed the structure of the *Simplified Conceptual Model of Hospital Performance*, which is a simplified version (by means of deleting four model variables and six causal links) of the *Conceptual Model of Hospital Performance* that the participant stakeholders created during the GMB sessions. Exactly as the *Conceptual Model of Hospital Performance*, the *Simplified Conceptual Model of Hospital Performance* also depicts the actual structure of the system at hand and can be used to explain the current low performance.

Seven Reinforcing and four Balancing feedback loops were identified, named and discussed (available also in Appendix 23): R1 – Budgetary Control & Cutback Management (Approved Budget-Financial Resources-Hospital Spending); R2 – Informal Payments & Corruption (Informal Payments for early Surgery/Admission - Waiting List for Surgery or Admission); R3 - Doctors' and Nurses' Skills Building (Hospital Reputation - Incoming Patients - Admitted Patients - Doctors' and Nurses' Skills & Experience); R4 - Length of Stay & Complications (Length of Stay – Complications); R5 – Multidrug Resistance in the General Population (Multidrug Resistance in Population - Nosocomial Infections Rate); R6 – Clinical Efficiency & Hospital Reputation (Hospital Reputation - Incoming Patients - Admitted Patients - Doctors' and Nurses' Skills & Experience - Accurate Diagnosis & Appropriateness of Therapeutic Care - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction); R7 – Complications & Hospital Reputation (Hospital Reputation - Incoming Patients - Admitted Patients - Doctors' and Nurses' Skills & Experience - Accurate Diagnosis & Appropriateness of Therapeutic Care - Length of Stay – Complications - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction);

B1 – Word of Mouth & Waiting Times (Hospital Reputation - Incoming Patients - Waiting Time in ER & Outpatient Services - Patient Satisfaction); B2 – Patient Satisfaction & Attendance to Patients' Needs (Hospital Reputation - Incoming Patients - Admitted Patients - Doctor or Nurse-Patient Ratio - Actual Time Available per Patient/Task - Communication & Attendance to Patients' Needs - Patient Satisfaction); B3 - Actual Time Available & Errors (Hospital Reputation - Incoming Patients - Admitted Patients - Doctor or Nurse-Patient Ratio - Actual Time Available per Patient/Task – Errors – Complications - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction); B4 - Actual Time Available and Adherence to Guidelines & Protocols (Hospital Reputation - Incoming Patients - Admitted Patients - Doctor or Nurse-Patient Ratio - Actual Time Available per Patient/Task - Adherence to Guidelines & Protocols - Nosocomial Infections Rate – Complications - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction).

Given the current policies of Cutback Management in place, loop R1 – Budgetary Control & Cutback Management is catastrophic for hospital performance in the long run, as it leads to a perpetual decrease of financial resources and purchasing power in the long run, leading to a lack of capacity by public hospitals to cover their needs. Given the long waiting lists that are already in place in all Greek public hospitals, as a result of the current policies, and given the widespread idea between patients that informal payments are necessary for a timely and proper treatment, loop R2 – Informal Payments & Corruption is catastrophic for public health in the long run, as it leads to a perpetual increase of private spending on healthcare and to the outspread of corruption between public hospital doctors. Loop R4 - Length of Stay & Complications highlights the need for a short Length of Stay to avoid complications. Loop R5 – Multidrug Resistance in the General Population highlights the need for limiting Nosocomial Infections Rate using appropriate measures, in order to reduce multidrug resistance in the general population.

Loop R3 - Doctors' and Nurses' Skills Building leads to a perpetual increase of skills mix and reputation for the already successful hospitals in the long run, and to a perpetual decrease for the currently unsuccessful ones; a well-known phenomenon in the system's literature known as the Success to the Successful archetype (Senge, 1990). Seemingly, Loop R6 – Clinical Efficiency & Hospital Reputation leads to a perpetual increase of clinical efficiency, accumulated intellectual and skills capital, reputation for the already successful hospitals in the long run, and to a perpetual decrease for the currently unsuccessful ones. Exactly as Loops R3 and R6, Loop R7 – Complications & Hospital Reputation leads to a perpetual increase of clinical efficiency, accumulated intellectual and skills capital, and reputation for the already successful hospitals in the long run, and to a perpetual decrease for the currently unsuccessful ones. Thus, loops R3, R6 and R7 are beneficial for big, urban hospitals that are generally better staffed and equipped, whereas catastrophic for the small, rural hospitals' performance in the long run; a well-known phenomenon in the system's literature known as the Success to the Successful archetype (Senge, 1990).

However, all the four balancing loops B1, B2, B3 and B4 lead to a gradual decrease and stabilisation of patient satisfaction and of hospital reputation for the already successful hospitals in the long run; a well-known phenomenon in the system's literature known as the Limits to Success archetype (Senge, 1990). The balancing loops show that, paradoxically, a good hospital reputation is both a blessing and a curse, doomed to be deteriorated

because of the adverse effects of: (1) long waiting times; (2) less attendance to patients' needs; (3) more errors; and (4) limited adherence to guidelines & protocols, all of which are inevitably generated in hospitals with good reputation and increasing volumes of incoming patients, causing their overall performance to decrease.

Apart from Appendix 23 (where the *Simplified Conceptual Model* and the loops are available), Appendix 24 is supplementary to the understanding of this chapter. In Appendix 24 we analytically present and explain all the variables and causal links of the *Conceptual*, *Policy* and *Simplified Models of Hospital Performance*, as defined by the participants stakeholders. For each variable we give the definition that participants came up with; some more explanations, where needed; and the Causal Links of each variable. More specifically, in the section "Causal Links" of each variable in Appendix 24 we present the "Causes Tree" (i.e., the graphical representation of all the causal links that are coming towards the variable at hand) and the "Uses Tree" (i.e., the graphical representation of all the causal links that are going out from the variable at hand) and we explicitly analyse, explain and discuss all the causal links between the variable at hand and all the other variables in the model.

CHAPTER 9 - DYNAMIC HYPOTHESES TO EXPLAIN THE NEGATIVE OUTCOMES OF THE GREEK HEALTHCARE REFORM DOCUMENTED AT THE CASE HOSPITAL

Chapter 9 corresponds to the third research question of our study, namely: *How can those feedback loops explain the documented negative outcomes of the Greek healthcare reform.* In order to answer this question, in chapter 9 we tried to explain each one of the seven main negative outcomes of the reform identified in the case hospital which we identified through the preliminary interviews and documents analysis in chapter 7 (i.e., Health Workers' and Patients' perceptions of Low Safety; Low Patient Satisfaction; Informal Payments; High Mortality Rates; Numerous Medical Errors; High Nosocomial & Multidrug-resistant bacteria Infections Rates; Lack of Clinical Guidelines and Treatment Protocols) with one dynamic hypothesis which we formed based on the model loops we identified in chapter 8. More specifically, in the section 9.1 we briefly present our key assumption and then in the section 9.2 we present and analyse the seven dynamic hypotheses derived from the feedback loops of the *Simplified Conceptual Model* that we presented in chapter 8 (available in the sections 8.2 and 8.3), and we show how each of the seven counterintuitive negative outcomes documented can be explained by those hypotheses.

9.1 Key Assumption

The research approach adopted was based on the assumption that hospital performance is a multi-loop, feedback system of interrelated elements, forming complicated dynamic mechanisms. In that sense, any performance management policy changes the structure of the system and affects many elements, causing simultaneously intended and unitended outcomes, trade-offs between them and between short-term and long-term effects.

Understanding and analysing those mechanisms of the hospital performance system, based on the *Simplified Conceptual Model of Hospital Performance*, enabled us to create a set of hypotheses which can explain all of the seven negative outcomes of the healthcare reform presented in chapter 6, which our literature review highlighted and our research revealed that they are present at the case hospital, namely: Health Workers' and Patients' perceptions of Low Service Quality and Safety; Low Patient Satisfaction; Informal Payments; High Mortality Rates; Numerous Medical Errors; High Nosocomial & Multidrug-Resistant Bacteria Infections Rates; Low Adherence to Clinical Guidelines and Treatment Protocols. Below we present and explain those dynamic hypotheses for each one of those seven unintended outcomes that our research highlighted. In order to test those hypotheses, however, a quantified SD model (a stock-flow diagram) would be needed, as that would enable us to run simulations and test our hypothesis in different scenarios to analyse the loop dominance. Such a model is not included in the present study, but is recommended for future research.

9.2 Dynamic Hypotheses (DH)

In this section we present and explain DH1 until DH7, which are the seven dynamic hypotheses we formed in order to explain the seven negative outcomes of the healthcare reform which are present at the case hospital, according to our findings presented in chapter 6, namely: Health Workers' and Patients' perceptions of Low Service Quality and Safety; Low Patient Satisfaction; Informal Payments; High Mortality Rates; Numerous Medical Errors; High Nosocomial & Multidrug-Resistant Bacteria Infections Rates; Lack of Clinical Guidelines and Treatment Protocols.

Each of those seven negative outcomes is linked to one model variable as the most "indicative" model indicator to predict this outcome (e.g., the negative outcome Low Patient Satisfaction is linked to the model variable *Patient Satisfaction* as the most "indicative" model indicator to predict this outcome, and so on). Then, we formed our hypotheses based on two different ways of analysis: first, based on the model loops of the *Simplified Conceptual Model of Hospital Performance* and, second, based on the causal tree of each variable of the *Conceptual Model of Hospital Performance*.

DH 1: Explaining Low Safety

Safety is embedded in many of our model variables, including *Complications*, *Errors* and *Nosocomial Infections Rate*. *Errors* and *Nosocomial Infections Rate*, however, are discussed separately in the next paragraphs 18.2.5 and 18.2.6, as those variables also reflect clinical effectiveness. Thus, in order to explain the low safety documented at the case hospital, we took as the most indicative indicators of this negative outcome the model variables *Survival Rate / Patients' Health Status & Quality of Life* and *Complications.*

Survival Rate / Patients' Health Status & Quality of Life

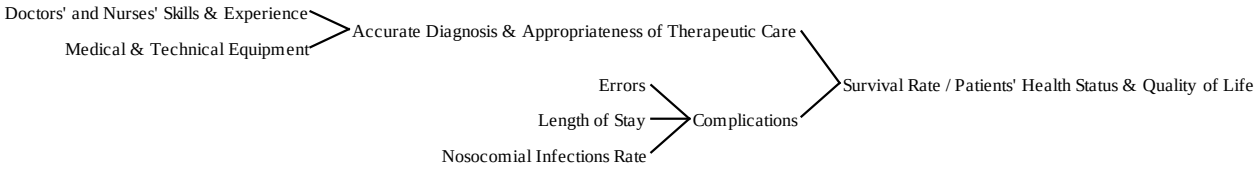
Patients' *Survival Rate* is, for our GMB participants, the rate at which hospitalised patients survive and get discharged from the hospital alive after their treatment, whereas *Patients' Health Status & Quality of Life* is, according to them, an indicator of the level of the patients' health and quality of life after their hospital treatment, in respect to a reference level of health and quality of life based on their age and condition.

One way of explaining the low safety documented at the case hospital, in terms of low *Survival Rate / Patients' Health Status & Quality of Life*, is based on the model loops of the *Simplified Conceptual Model of Hospital Performance*. The variable *Survival Rate / Patients' Health Status & Quality of Life* is included in four different loops of the *Simplified Conceptual Model*, and more specifically it is included in the loops B3 - Actual Time Available & Errors, B4 - Actual Time Available and Adherence to Guidelines & Protocols, R6 – Clinical Efficiency & Hospital Reputation, and R7 – Complications & Hospital Reputation. The loops B3 and B4 cause the *Survival Rate / Patients' Health Status & Quality of Life* to decrease, whereas the Loops R6 and R7 cause it to increase. The CLD shows a fair mix between loops that reinforce hospital performance (either in a positive or negative direction) and loops that balance (control) it.

Since a CLD is a purely qualitative tool it does not indicate the strength of each loop, nor can it be used for inferring loop dominance or trend (dynamic behaviour) of variables. However, the *Reference Mode* (available in chapter 7.2 and in Appendix 19) indicates that in early 2020, at the moment of writing, hospital performance is stabilizing, indicating the dominance of the balancing loops. We could therefore suggest that the dominating loops responsible for the documented low *Survival Rate / Patients' Health Status & Quality of Life* are loops B3 and B4.

An additional way of explaining the low safety documented at the case hospital, in terms of low *Survival Rate / Patients' Health Status & Quality of Life*, would be that of analysing the variable's causal tree in the *Conceptual Model of Hospital Performance*. In our model, *Survival Rate / Patients' Health Status & Quality of Life* is a function of two other variables: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; and *Complications*.

Figure 24. Causes Tree of the Variable: *Survival Rate / Patients' Health Status & Quality of Life*



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the *Survival Rate / Patients' Health Status & Quality of Life*:

(1) decreases as the *Complications* increase. This is because the more the *Complications* during the treatment, the more compromised the immune system of the patient gets and the more are his/her chances of death. Furthermore, a compromised immune system makes it easier for the patient to get infected by contagious pathogens in the hospital environment and raises even more his chances of failure of the treatment or death.

(2) increases as the *Accurate Diagnosis & Appropriateness of Therapeutic Care* increases. This is because the more Accurate the Diagnosis and - subsequently - the more appropriate the treatment provided for his condition, the better for the patient's outcome of the disease and the more his/her chances are to recover and to survive.

Complications

Complications, according to our participants, is the rate at which unintended secondary diseases, conditions or infections occur during the treatment of *Admitted Patients* in the hospital, deteriorating their health status and causing them death or forcing them to stay more time admitted in order to recover.

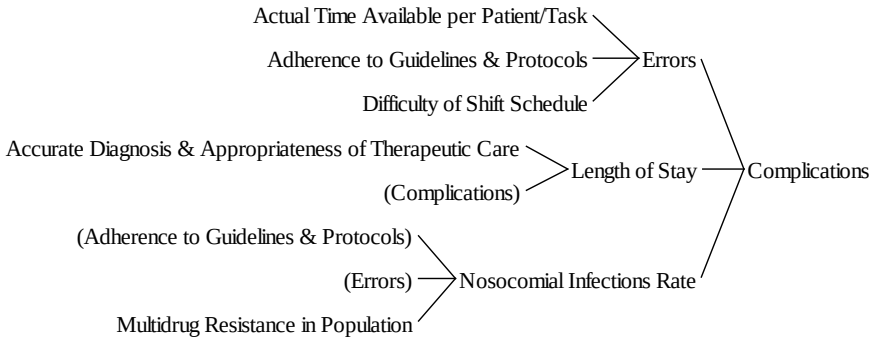
One way of explaining the low safety documented at the case hospital, in terms of the increased occurrence of *Complications*, is based on the model loops of the *Simplified Conceptual Model of Hospital Performance*. The variable *Complications* is included in four different loops of the *Simplified Conceptual Model*, and more specifically it is included in the loops: B3 - Actual Time Available & Errors, B4 - Actual Time Available and

Adherence to Guidelines & Protocols, R4 - Length of Stay & Complications, R7 – Complications & Hospital Reputation. The loops B3, B4 and R4 cause *Complications* to increase, whereas the Loop R7 cause it to decrease. The CLD shows a fair mix between loops that reinforce hospital performance (either in a positive or negative direction) and loops that balance (control) it.

Since a CLD is a purely qualitative tool it does not indicate the strength of each loop, nor can it be used for inferring loop dominance or trend (dynamic behaviour) of variables. However, the *Reference Mode* (available in chapter 7.2 and in Appendix 19) indicates that in early 2020, at the moment of writing, hospital performance is stabilizing, indicating the dominance of the balancing loops. We could therefore suggest that the dominating loops responsible for the high occurrence of *Complications* documented are loops B3 and B4.

An additional way of explaining the low safety documented at the case hospital, in terms of the increased occurrence of *Complications*, would be that of analysing the variable's causal tree in the *Conceptual Model of Hospital Performance*. In our model, *Complications* is a function of three other variables: *Length of Stay*; *Errors*; and *Nosocomial Infections Rate*.

Figure 25. Causes Tree of the Variable: *Complications*



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Complications*: (1) increase as the *Length of Stay* increases. This is because *Length of Stay* augments the chances that a complication occurs: the more time the inpatient is being treated, the more become the chances that he/she gets a nosocomial infection or that he/she becomes subject to an error of the medical staff.
(2) increase as the *Nosocomial Infections Rate* increases. This is because the higher the Hospital's *Nosocomial Infections Rate*, the more are the chances that a patient gets infected in a given time period.
(3) increase as the *Errors* increase. This is because personnel's or patients' and carers' *Errors* (e.g., mistaken dosage of the right medicine or wrong medicine) directly cause *Complications* to the patients, sometimes serious ones.

Therefore, according to DH1 safety is low at the case hospital because of the dominance of the loops B3 and B4, both of which lead to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* and of the *Adherence to Guidelines & Protocols* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at less *Proper Communication & Attendance to Patients' Needs*, more *Errors* and

Complications, longer *Length of Stay*, higher *Nosocomial Infections Rate*, and, finally, to lower *Survival Rate* and *Patients' Health Status & Quality of Life* after treatment.

DH 2: Explaining Low Patient Satisfaction

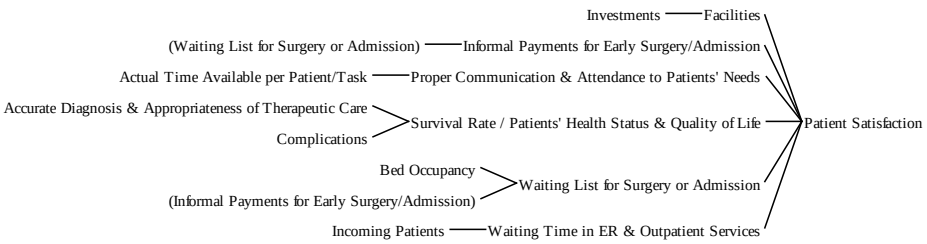
In order to explain the low patient satisfaction documented at the case hospital, we took as the most indicative indicator of this negative outcome the model variable *Patient Satisfaction*. The variable *Patient Satisfaction* shows, according to our GMB participants, the level at which patients are satisfied with the overall experience and outcome of their hospital treatment.

One way of explaining low patient satisfaction documented at the case hospital is based on the model loops of the *Simplified Conceptual Model of Hospital Performance*. The variable *Patient Satisfaction* is included in six different loops of the *Simplified Conceptual Model*, and more specifically it is included in the loops: B1 – Word of Mouth & Waiting Times, B2 – Patient Satisfaction & Attendance to Patients' Needs, B3 - Actual Time Available & Errors, B4 - Actual Time Available and Adherence to Guidelines & Protocols, R6 – Clinical Efficiency & Hospital Reputation, R7 – Complications & Hospital Reputation. The loops B1, B2, B3 and B4 cause *Patient Satisfaction* to decrease, whereas the Loops R6 and R7 cause it to increase.

Since a CLD is a purely qualitative tool it does not indicate the strength of each loop, nor can it be used for inferring loop dominance or trend (dynamic behaviour) of variables. However, the *Reference Mode* (available in chapter 7.2 and in Appendix 19) indicates that in early 2020, at the moment of writing, hospital performance is stabilizing, indicating the dominance of the balancing loops. We could therefore suggest that the dominating loops responsible for the high occurrence of *Complications* documented are the loops B1, B2, B3 and B4.

An additional way of explaining low *Patient Satisfaction* documented at the case hospital would be that of analysing the variable's causal tree in the *Conceptual Model of Hospital Performance*. In our model, *Patient Satisfaction* is a function of six other variables: *Facilities*; *Informal Payments for early Surgery/Admission*; *Proper Communication & Attendance to Patients' Needs*; *Survival Rate / Patients' Health Status & Quality of Life*; *Waiting List for Surgery or Admission*; and *Waiting Time in ER & Outpatient Services*.

Figure 26. Causes Tree of the Variable: *Patient Satisfaction*



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Patient Satisfaction*:

(1) increases as the *Facilities* increase. Physical *Facilities* (e.g., modern and nicely decorated patient rooms, restaurants, outdoor play areas for children, furniture, etc) and other amenities provided by the hospital (e.g., privacy and cleanness in rooms, toilets and common spaces; internet access for patients and guests, etc) and other similar amenities related to the physical facilities of the hospital and the comfort that they provides to patients are very important aspects of the patients' hospitalisation experience and is largely what they have in mind when filling in patient satisfaction questionnaires.

(2) increases as the *Proper Communication & Attendance to Patients' Needs* increases. A polite behaviour, a good communication and the attendance to their needs by the medical and nursing staff are largely what patients perceive as "good hospital treatment" and is what they have in mind when evaluating their hospitalisation experience in the patient satisfaction questionnaires. This happens because patients are not able – unless they are doctors themselves - to evaluate the appropriateness of treatment and diagnosis, or the medical and scientific integrity of doctors and nurses.

(3) increases as the *Survival Rate / Patients' Health Status & Quality of Life* increases. Although patients cannot evaluate the appropriateness of treatment and diagnosis, they can - and they often do - evaluate the outcome of the treatment and their quality of life after discharge (i.e., their overall level of health, pain and functionality after treatment in comparison to before treatment).

(4) decreases as the *Waiting List for Surgery or Admission* increases, because according to our participants, most of the patients do not like to wait long times for having an elective surgery or a necessary treatment, but most importantly because - depending also on the severity of their condition - they might feel that their health will deteriorate if they wait.

(5) decreases as the *Waiting Time in ER & Outpatient Services* increases, which is quite logical as nobody likes long queues and long waiting times to be examined. Especially when it comes to being in the ER for an emergency, waiting can be fatal.

(6) decreases as the *Informal Payments for early Surgery/Admission* increase, as patients do not like being forced to pay out-of-pocket money for getting access to the public healthcare services which are supposed to be free of charge.

Therefore, according to DH2 *Patient Satisfaction* is low at the case hospital because of the dominance of the loops B1, B2, B3 and B4, all of which lead to a gradual decrease and stabilisation of patient satisfaction and of hospital reputation in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at less *Proper Communication & Attendance to Patients' Needs,* more *Informal Payments for early Surgery/Admission* longer *Waiting List for Surgery or Admission*, longer *Waiting Time in ER & Outpatient Services* and, finally, to lower *Survival Rate* and *Patients' Health Status & Quality of Life* after treatment.

DH 3: Explaining Informal Payments

In order to explain the high rate of informal payments documented at the case hospital, we took as the most indicative indicator of this negative outcome the model variable *Informal Payments for early Surgery/Admission*. The variable *Informal Payments for early Surgery/Admission* shows, according to our GMB participants, the rate

of patients' out-of-pocket, informal payments to public hospital doctors for scheduling their surgery or admission earlier, in order for them to avoid the long waiting time on the list. Since priority over the waiting list is given only to urgent cases, those patients get admitted in the hospital through the Emergency Department (ER) by getting characterised as "urgent cases", in order to get priority and avoid waiting on the list for surgery or admission in a specialised unit or department. Our GMB participants called this phenomenon "the suitcase effect", as those patients arrive in the ER with their suitcase, ready to be admitted.

One way of explaining *Informal Payments for early Surgery/Admission* documented at the case hospital, is based on the model loops of the *Simplified Conceptual Model of Hospital Performance*. The variable Informal Payments is included in one loop of the *Simplified Conceptual Model*, and more specifically it is included in the loop R2 – Informal Payments & Corruption, which causes Informal Payments to increase. Indeed, our analysis showed that in early 2020, at the moment of writing, informal payments in the hospital are increasing, indicating the existence of a reinforcing loop.

An additional way of explaining *Informal Payments for early Surgery/Admission* would be that of analysing the variable's causal tree in the *Conceptual Model of Hospital Performance*. In our model, *Informal Payments for early Surgery/Admission* is a function of the variable: *Waiting List for Surgery or Admission*.

Figure 27. Causes Tree of the Variable: *Informal Payments for early Surgery/Admission*

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the rate of *Informal Payments for early Surgery/Admission* increases as the *Waiting List for Surgery or Admission* increases. This happens because, according to our participants, most of the patients do not like to wait long times for having an elective surgery or a necessary treatment, but most importantly because - depending also on the severity of their condition - they might feel that their health will deteriorate if they wait. Thus, they commit to paying the doctors out-of-pocket money, thinking that they will not get timely and appropriate treatment unless they do it.

Therefore, according to DH3 *Informal Payments* are high at the case hospital because of loop R2, which leads to a perpetual increase of private spending and to the outspread of corruption between the case hospital doctors, given the good reputation of the case hospital and the long waiting lists that are already in place. This phenomenon is sustained by the current policies in place, which favour the creation of long waiting lists, but is also sustained by factors external to the case hospital and to our model, such the relative tolerance of the Ministry of Health and of the authorities, and the widespread idea between patients in Greece that informal payments are necessary for a timely and proper treatment.

DH 4: Explaining High Mortality Rates

In order to explain the high mortality rates of the case hospital, we took as the most indicative indicator of this negative outcome the model variable *Failure & Mortality Rates*. *Mortality Rate* is, according to our GMB participants, the rate at which hospitalised patients die during their treatment in the hospital or soon after that. *Failure Rate* is, according to our GMB participants, the rate at which the hospital fails to provide the patient with the optimal treatment for his/her condition and age.

One way of explaining the high mortality rates of the case hospital is based on the model loops of the *Simplified Conceptual Model of Hospital Performance*. The variable *Failure & Mortality Rates*, however, is included in zero loops of the *Simplified Conceptual Model*. Nevertheless, the causal tree of the variable *Failure & Mortality Rates* is exactly the same as the causal tree of the variable *Survival Rate / Patients' Health Status & Quality of Life*. Those two variables, *Failure & Mortality Rates* on the one hand and *Survival Rate / Patients' Health Status & Quality of Life* on the other hand are behaving exactly in the opposite way. Thus, if the survival rate is increasing, mortality rates are decreasing, and the other way around. Subsequently, we can examine the loops where the variable *Survival Rate / Patients' Health Status & Quality of Life* is included, in order to infer the behaviour of the variable *Failure & Mortality Rates.*

The variable *Survival Rate / Patients' Health Status & Quality of Life* is included in four different loops of the *Simplified Conceptual Model*, and more specifically it is included in the loops B3 - Actual Time Available & Errors, B4 - Actual Time Available and Adherence to Guidelines & Protocols, R6 – Clinical Efficiency & Hospital Reputation, and R7 – Complications & Hospital Reputation. The loops B3 and B4 cause the *Survival Rate / Patients' Health Status & Quality of Life* to decrease, whereas the Loops R6 and R7 cause it to increase. The CLD shows a fair mix between loops that reinforce hospital performance (either in a positive or negative direction) and loops that balance (control) it.

Since a CLD is a purely qualitative tool it does not indicate the strength of each loop, nor can it be used for inferring loop dominance or trend (dynamic behaviour) of variables. However, the *Reference Mode* (available in chapter 7.2 and in Appendix 19) indicates that in early 2020, at the moment of writing, hospital performance is stabilizing, indicating the dominance of the balancing loops. We could therefore suggest that the dominating loops responsible for the documented low *Survival Rate / Patients' Health Status & Quality of Life* – and subsequently, for the high *Failure & Mortality Rates* - are loops B3 and B4.

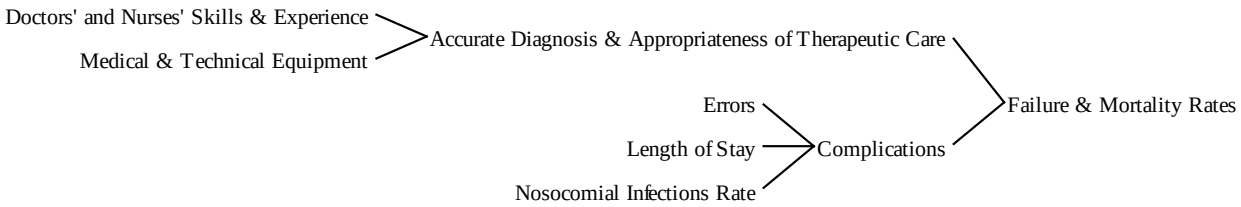
An additional way of explaining the high mortality rates of the case hospital would be that of analysing the variable's causal tree in the *Conceptual Model of Hospital Performance*. In our model, *Failure & Mortality Rates* is a function of two other variables: *Accurate Diagnosis & Appropriateness of Therapeutic Care* and *Complications*.

As shown on the Causes Tree below, the participant stakeholders of our GMB sessions agree that *Failure & Mortality Rates*:

(1) increase as the *Complications* increase. This is because the more the *Complications* during the treatment, the more compromised the immune system of the patient gets and the more are his/her chances of death. Furthermore,

a compromised immune system makes it easier for the patient to get infected by contagious pathogens in the hospital environment and raises even more his chances of failure of the treatment or death.
(2) decrease as the *Accurate Diagnosis & Appropriateness of Therapeutic Care* increases. This is because the more accurate the diagnosis and - subsequently - the more appropriate the treatment provided for his condition, the better for the patient's outcome of the disease and the more his/her chances to recover and to survive.

Figure 28. Causes Tree of the Variable: *Failure & Mortality Rates*



Therefore, according to DH4 *Failure & Mortality Rates* are high at the case hospital because of the dominance of the loops B3 and B4, both of which lead to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* and of the *Adherence to Guidelines & Protocols* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at less *Proper Communication & Attendance to Patients' Needs*, more *Errors* and *Complications*, longer *Length of Stay*, higher *Nosocomial Infections Rate*, and, finally, to higher *Failure & Mortality Rates*.

DH 5: Explaining Numerous Medical Errors

In order to explain the numerous medical errors documented at the case hospital, we took as the most indicative indicator of this negative outcome the model variable *Errors*. By *Errors* our participants mean any unintended human action, omission, negligence, miscommunication, misunderstanding or misperception performed by the hospital doctors, nurses, health workers, or by the patients and their carers which might turn out to be harmful for the staff's, the patient's or the other patients' health and well-being.

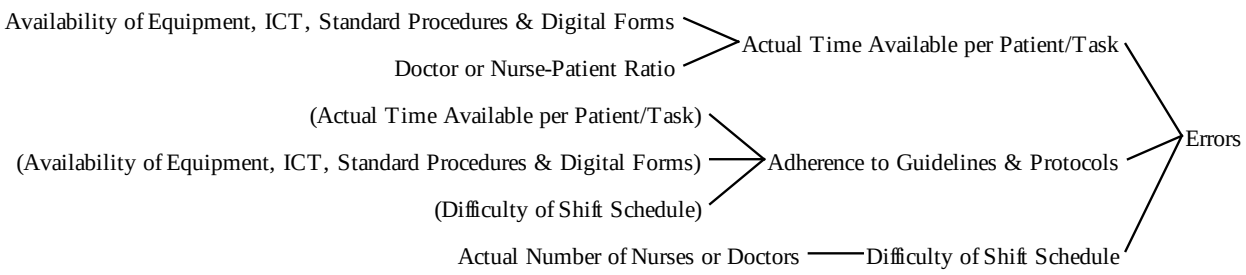
One way of explaining the numerous medical errors documented at the case hospital, is based on the model loops of the *Simplified Conceptual Model of Hospital Performance*. The variable *Errors* is included in one loop of the *Simplified Conceptual Model*, and more specifically it is included in the loop B3 - Actual Time Available & Errors, which causes *Errors* to increase in the long run.

An additional way of explaining the numerous medical errors documented at the case hospital would be that of analysing the variable's causal tree in the *Conceptual Model of Hospital Performance*. In our model, *Errors* is a function of three other variables: *Actual Time Available per Patient/Task*; *Adherence to Guidelines & Protocols*; and *Difficulty of Shift Schedule*.

As shown on the Causes Tree below, the participant stakeholders of our GMB sessions agree that Errors:

(1) decrease as the Actual Time Available per Patient/Task increases. This is because the more the Actual Time Available per Patient/Task, the more the time that doctors and nurses have available to spend with each patient, answering his/her questions and giving him and his carers information and instructions regarding his/her condition, treatment and personal care from their experience. Subsequently, usual patients' Errors which create complications or unexpected readmissions are avoided. Furthermore, the more the time medical and nursing staff spends with each patient, the better they will get to know and remember the condition of each patient and the less the medical and nursing staff's *Errors* due to negligence, miscommunication, misunderstanding or misperception will be.
(2) decrease as the *Adherence to Guidelines & Protocols* increases, because the more the adherence to guidelines and medical protocols, the more appropriate the patients' handling will be; the more will be the measures and precautions taken for the safety of staff and patients, and the more *Errors* will be avoided.
(3) increase as the *Difficulty of Shift Schedule* increases. This is because the more difficult the shift schedule is – meaning that the necessary rests are not respected - the more tired and sleepy the health workers might feel during their (especially night) shifts, and the more probable is for them to commit *Errors*.

Figure 29. Causes Tree of the Variable: *Errors*



Therefore, according to DH5 *Medical Errors* are increasing at the case hospital because of the loop B3 which leads to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* and of the *Adherence to Guidelines & Protocols* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at higher *Difficulty of Shift Schedule* for nurses and doctors, less *Proper Communication & Attendance to Patients' Needs* and, finally, to more *Errors*.

DH 6: Explaining High Nosocomial & Multidrug-Resistant Bacteria Infections Rates

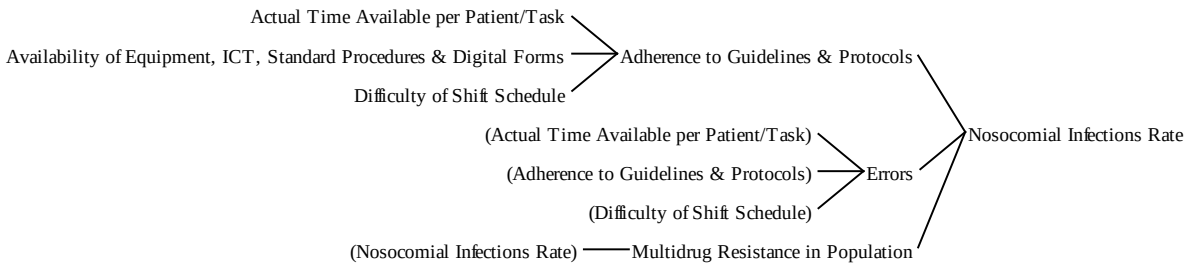
In order to explain the high nosocomial and multidrug-resistant bacteria infections rates documented at the case hospital, we took as the most indicative indicator of this negative outcome the model variable *Nosocomial Infections Rate*. By *Nosocomial Infections Rate* our GMB participants mean the actual rate of infections (potentially of multidrug resistant bacteria) acquired by the patients while being hospitalised, or by their carers and the hospital staff.

One way of explaining the high nosocomial and multidrug-resistant bacteria infections rates documented at the case hospital is based on the model loops of the *Simplified Conceptual Model of Hospital Performance*. The

variable *Nosocomial Infections Rate* is included in two different loops in the *Simplified Conceptual Model*, and more specifically it is included in the loops R5 – Multidrug Resistance in the General Population, and B4 - Actual Time Available and Adherence to Guidelines & Protocols. Both loops R5 and B4 cause *Nosocomial Infections Rate* to increase.

An additional way of explaining the high nosocomial and multidrug-resistant bacteria infections rates documented at the case hospital would be that of analysing the variable's causal tree in the *Conceptual Model of Hospital Performance*. In our model, *Nosocomial Infections Rate* is a function of three other variables: *Adherence to Guidelines & Protocols*; *Multidrug Resistance in Population*; and *Errors*.

Figure 30. Causes Tree of the Variable: *Nosocomial Infections Rate*



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Nosocomial Infections Rate*:

(1) increases as the *Multidrug Resistance in Population* increases. This is because the higher the Multidrug Resistance in the general population, the more will be the colonised patients admitted in the hospital and the more the possibilities that they will infect other patients there, pushing the *Nosocomial Infections Rate* higher than otherwise.

(2) increases as the *Errors* increase, because some of the medical and nursing staff's *Errors* (e.g., improper sterilization of catheters and surgical equipment) directly cause infections (i.e., urinary tract infections and surgical site infections respectively) to the patients.

(3) decreases as the *Adherence to Guidelines & Protocols* increases, as adherence to guidelines, measures, nursing and medical protocols ensures among others appropriate patients handling; appropriate material & waste management; adequate staff's vaccination coverage; and other measures and precautions which limit the spread of *Nosocomial Infections Rate*.

Therefore, according to DH6 *Nosocomial Infections Rate* is increasing at the case hospital because of the loops R5 and B4, both of which cause it to increase in the long run, resulting at more *Complications* and higher *Multidrug Resistance in Population*.

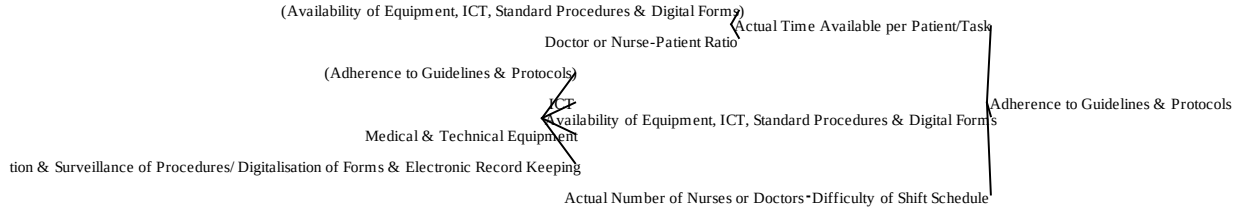
DH 7: Explaining Low Adherence to Clinical Guidelines and Treatment Protocols

In order to explain the low adherence to clinical guidelines and treatment protocols at the case hospital, we took as the most indicative indicator of this negative outcome the model variable *Adherence to Guidelines & Protocols*. By *Adherence to Guidelines & Protocols* participant stakeholders mean the level at which the doctors and nurses as well as the rest of the paramedic staff follow the measures and procedures that are imposed by the national and international medical and nursing protocols and guidelines.

One way of explaining the lack of sufficient clinical guidelines and treatment protocols at the case hospital is based on the model loops of the *Simplified Conceptual Model of Hospital Performance*. The variable *Adherence to Guidelines & Protocols* is included in one loop in the *Simplified Conceptual Model*, and more specifically it is included in the loop B4 - Actual Time Available and Adherence to Guidelines & Protocols, which causes *Adherence to Guidelines & Protocols* to decrease.

An additional way of explaining the lack of sufficient clinical guidelines and treatment protocols at the case hospital would be that of analysing the variable's causal tree in the *Conceptual Model of Hospital Performance*. In our model, *Adherence to Guidelines & Protocols* is a function of three other variables: *Availability of Equipment, ICT, Standard Procedures & Digital Forms*; *Difficulty of Shift Schedule*; and *Actual Time Available per Patient/Task*.

Figure 31. Causes Tree of the Variable: *Adherence to Guidelines & Protocols*



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the *Adherence to Guidelines & Protocols*:

(1) increases as the *Actual Time Available per Patient/Task* increases. This is mainly because, in their mind, following guidelines is "a more time-consuming way of doing things"; thus, the more the actual time they have available to finish all their tasks during their shift, the more willing they are to allocate some time on following the guidelines - provided of course that they already know how to do that, and have been sufficiently educated and trained to the implementation of those guidelines and protocols.

(2) decreases as the *Difficulty of Shift Schedule* increases. This happens for a number of reasons. First of all, the more difficult the shift schedule is – meaning that the necessary rests are not respected - the more tired and sleepy the health workers might feel during their (especially night) shifts, and the more probable is for them not to follow the guidelines properly. Secondly, when the shifts schedule is such that the necessary rests are not respected, department managers are not willing to create and implement an Internal Regulation as they are not sure they will

be able to comply to it, given the circumstances, and non-compliance to such a regulation might result in legal sanctions personally for them as department managers. Another reason is that the more difficult their shift schedule is, the less rest they get, the more tired they feel and the more negatively their well-being and personal life is affected. This results in limited motivation for effective work, as well as to limited time and willingness to get more education and training. Lack of education and training, in turn, could mean lack of knowledge and/or capacity to implement protocols/guidelines and lack of awareness of the importance and the risks associated with the non-adherence to them.

(3) increases as the *Availability of Equipment, ICT, Standard Procedures & Digital Forms* increase. This is because breaking down guidelines and protocols into steps of Standard Procedures & Duties makes it easier for the medical staff to follow them, while having in place the necessary *Medical & Technical Equipment* and *ICT* support to implement those procedure makes it possible to follow those procedures in the time they have available, as they make the work of the medical and nursing staff much faster.

Therefore, according to DH7 *Adherence to Guidelines & Protocols* is low at the case hospital because of the loop B4 which leads to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at increased *Difficulty of Shift Schedule* for nurses and doctors, low *Availability of Equipment, ICT, Standard Procedures & Digital Forms* and, finally, to low *Adherence to Guidelines & Protocols.*

9.3 Conclusions

Chapter 9 corresponds to the third research question of our study, namely: *How can those feedback loops explain the documented negative outcomes of the Greek healthcare reform.* In order to answer this question, in chapter 9 we tried to explain each one of the seven main negative outcomes of the Greek healthcare reform identified in the case hospital through the preliminary interviews and documents analysis in chapter 6 with one dynamic hypothesis which we formed based on the model loops (explained in chapter 8) and the causal tree of the corresponding model variable (available in Appendix 24).

More specifically, out of all the unintended negative outcomes of the Greek healthcare reform documented in the literature that we presented in the section 6.1.4, in the section 6.2 we found the following seven negative outcomes to be present at the case hospital, according to the documents' analysis, the preliminary interviews and GMB sessions with the participant stakeholders of our case hospital: (1) Health Workers' and Patients' perceptions of Low Safety; (2) Low Patient Satisfaction; (3) Informal Payments; (4) High Mortality Rates; (5) Numerous Medical Errors; (6) High Nosocomial & Multidrug-resistant bacteria Infections Rates; and (7) Low Adherence to Clinical Guidelines and Treatment Protocols. Then, we used the feedback loops of the *Simplified Conceptual Model* that we explained in chapter 8 (available in the sections 8.2 and 8.3) in order to derive seven *Dynamic Hypotheses (DH)* that could explain each of those seven counterintuitive negative outcomes documented.

We found that Health Workers' and Patients' perceptions of Low Safety are mostly associated with the variables "*Survival Rate / Patients' Health Status & Quality of Life*" and "*Complications*" of our model, and can

be explained by the dominance of the balancing loops B3 - Actual Time Available & Errors, and B4 - Actual Time Available and Adherence to Guidelines & Protocols, both of which cause those two variables to decrease (Dynamic Hypothesis 1). Low Patient Satisfaction can be explained by the interaction between the loops B1 – Word of Mouth & Waiting Times, B2 – Patient Satisfaction & Attendance to Patients' Needs, B3 - Actual Time Available & Errors, B4 - Actual Time Available and Adherence to Guidelines & Protocols, which cause Patient Satisfaction to decrease, and the Loops R6 – Clinical Efficiency & Hospital Reputation, R7 – Complications & Hospital Reputation, which cause it to increase (Dynamic Hypothesis 2). The existence of Informal Payments can be explained by the Loop R2 – Informal Payments & Corruption, which causes it to increase (Dynamic Hypothesis 3). High Mortality Rates can be explained by the Loops B3 - Actual Time Available & Errors, and B4 - Actual Time Available and Adherence to Guidelines & Protocols, which cause "Survival Rate / Patients' Health Status & Quality of Life" to decrease, and thus Mortality Rates to increase (Dynamic Hypothesis 4). Numerous Medical Errors can be explained by the Loop B3 - Actual Time Available & Errors, which causes Errors to increase (Dynamic Hypothesis 5). High Nosocomial & Multidrug-resistant bacteria Infections Rates can be explained by the loops R5 – Multidrug Resistance in the General Population, and B4 - Actual Time Available and Adherence to Guidelines & Protocols, both of which cause Nosocomial Infections Rate to increase. (Dynamic Hypothesis 6). Low Adherence to Clinical Guidelines and Treatment Protocols can be explained by the loop B4 - Actual Time Available and Adherence to Guidelines & Protocols, which causes Adherence to Guidelines & Protocols to decrease (Dynamic Hypothesis 7).

According to DH1, safety is low at the case hospital because of the dominance of the loops B3 and B4, both of which lead to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* and of the *Adherence to Guidelines & Protocols* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at less *Proper Communication & Attendance to Patients' Needs*, more *Errors* and *Complications*, longer *Length of Stay*, higher *Nosocomial Infections Rate*, and, finally, to lower *Survival Rate* and *Patients' Health Status & Quality of Life* after treatment.

According to DH2, *Patient Satisfaction* is low at the case hospital because of the dominance of the loops B1, B2, B3 and B4, all of which lead to a gradual decrease and stabilisation of patient satisfaction and of hospital reputation in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at less *Proper Communication & Attendance to Patients' Needs,* more *Informal Payments for early Surgery/Admission* longer *Waiting List for Surgery or Admission*, longer *Waiting Time in ER & Outpatient Services* and, finally, to lower *Survival Rate* and *Patients' Health Status & Quality of Life* after treatment.

According to DH3, *Informal Payments* are high at the case hospital because of loop R2, which leads to a perpetual increase of private spending and to the outspread of corruption between the case hospital doctors, given the good reputation of the case hospital and the long waiting lists that are already in place. This phenomenon is sustained by the current policies in place, which favour the creation of long waiting lists, but is also sustained by factors external to the case hospital and to our model, such the relative tolerance of the Ministry of Health and of

the authorities, and the widespread idea between patients in Greece that informal payments are necessary for a timely and proper treatment.

According to DH4, *Failure & Mortality Rates* are high at the case hospital because of the dominance of the loops B3 and B4, both of which lead to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* and of the *Adherence to Guidelines & Protocols* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at less *Proper Communication & Attendance to Patients' Needs*, more *Errors* and *Complications*, longer *Length of Stay*, higher *Nosocomial Infections Rate*, and, finally, to higher *Failure & Mortality Rates*.

According to DH5, *Medical Errors* are increasing at the case hospital because of the loop B3 which leads to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* and of the *Adherence to Guidelines & Protocols* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at higher *Difficulty of Shift Schedule* for nurses and doctors, less *Proper Communication & Attendance to Patients' Needs* and, finally, to more *Errors*.

According to DH6, *Nosocomial Infections Rate* is increasing at the case hospital because of the loops R5 and B4, both of which cause it to increase in the long run, resulting at more *Complications* and higher *Multidrug Resistance in Population*.

According to DH7, *Adherence to Guidelines & Protocols* is low at the case hospital because of the loop B4 which leads to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at increased *Difficulty of Shift Schedule* for nurses and doctors, low *Availability of Equipment, ICT, Standard Procedures & Digital Forms* and, finally, to low *Adherence to Guidelines & Protocols.*

In order to test those hypotheses, however, a quantified SD model (a stock-flow diagram) would be needed, as that would enable us to run simulations and test our hypothesis in different scenarios to analyse the loop dominance. Such a model is not included in the present study, but is recommended for future research.

CHAPTER 10 – THE DPM CANVAS: AN INTEGRATIVE FRAMEWORK OF HOSPITAL PERFORMANCE

Chapter 10 corresponds to the fourth research question of our study, namely: *What are the main strategic resources impacting hospital performance measures and what are the main performance drivers that are impacting intermediate products and end results.* In order to answer this question, in chapter 10 we performed the DPM analysis to identify those resources, drivers and indicators and show their role in the hospital performance management and measurement. More specifically, in the section 10.1 we used the DPM *instrumental view* to identify *Strategic Resources*, *Performance Drivers* and *End Results* of hospital performance. Then we moved on to operationalise the *instrumental view* from Static to Dynamic in the section 10.2, as the "time" factor is important for our analysis, and is not easy to grasp by the static instrumental DPM view. In the section 10.3 we cascade the DPM *instrumental view* from the hospital level to a divisional level, in order to understand the contribution of each one of the four hospital divisions of the case hospital which we mentioned in chapter 6.2 (the Medical, the Nursing, the Administrative & Financial and the Technical division) on the *End Results* (i.e., the final hospital services produced) and allow the division managers to start concentrating on the core intermediate, administrative products that divisions are required to deliver on the process that leads to the final end-results. This assessment provides the ground for the *objective view* of DPM, which is analysed in the section 10.4, used to map the ultimate and intermediate services value chain provided to both external and internal users of the case hospital. In the section 10.5 we present the *subjective* DPM view, which is a synthesis of the instrumental and the *objective view*, and requires that performance measures (i.e., the drivers and end-results associated with the delivery of products) are made explicit, and are then linked to the goals and objectives of decision-makers of the case hospital, which we identified in chapter 6, section 6.2.1, through our documents analysis. Finally, in the section 10.6 we summarise by combining the three DPM Views, and we discuss the insights that the DPM analysis offers us for a sustainable PM in Greek public hospitals in general, and in the case hospital in particular.

10.1 The DPM Instrumental View

There are three complementary, interconnected views in designing a DPM system for the sustainable enhancement of hospital services, which we will analytically present and discuss: the DPM *instrumental view*; the DPM *objective view* and the DPM *subjective view* (Bianchi, 2016, pp. 71-72). In order to implement the DMP as an approach to improve hospital performance in a sustainable way, the DPM *instrumental view* must first be applied (Bianchi, 2016, pp. 72-76). The *instrumental view* suggests that alternate methods for improving performance should be made clear. The analysis of the *instrumental view* helps the synthesis of key performance indicators of the overall hospital performance to be framed. In this respect, it is possible to identify both the end-results and their corresponding *Performance Drivers*. In order to impact *Performance Drivers*, each hospital division must build, maintain and use a sound endowment of *Strategic Resources* that are systemically connected

to each other. Therefore, each strategic resource can provide the foundation for maintaining others in the system of hospital performance.

10.1.1 Strategic Resources (SR)

The first step in this process would be to identify *Strategic Resources*. Indicators of *Strategic Resources* in our model are the model variables that are related to human, financial, technological and other resources. In our model those are: *Financial Resources*; *Facilities*; *ICT*; *Medical & Technical Equipment*; *Doctors' and Nurses' Skills & Experience*; *Hospital Reputation*; *Management Capacity*; and *Multidrug Resistance in Population*.

The key in this analysis is to understand that the hospital can purchase the physical resources (i.e., *Financial Resources*; *Facilities*; *ICT*; *Medical & Technical Equipment*) but it cannot purchase *Management Capacity* or *Hospital Reputation*, for example. Such intangible resources are equally important as the physical resources for the overall hospital performance; however, they cannot be purchased. Instead, they are built by internal management and clinical processes of the hospital. In our model, those resources are: *Doctors' and Nurses' Skills & Experience*; *Hospital Reputation*; *Management Capacity*; and *Multidrug Resistance in Population*.

10.1.2 End Results (ER)

The next step would be to identify *End Results*. According to Bianchi (2016, p.81), *"resource measures should not be confused with performance measures. There is a means versus ends relationship between the two".* Indicators of *End Results*, thus, are the model variables that are related to products and services but also to intended and unintended effects, consequences and by-products of the hospital function at large. In our model those are: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Admitted Patients*; *Costs*; *Errors*; *Failure & Mortality Rates*; *Hospital Spending*; *Investments*; *Waiting List for Surgery or Admission*; *Waiting Time in ER & Outpatient Services*; *Complications*; *Incoming Patients*, *Informal Payments for early Surgery/Admission*; *Nosocomial Infections Rate*; *Patient Satisfaction*; *Survival Rate / Patients' Health Status & Quality of Life*.

End-results should be further categorised into outputs and outcomes, to facilitate our DPM analysis. According to Bianchi (2016, pp.76) *"Output measures are workload (or volume) indicators. Outcome measures depict the aptitude of the recorded outputs to provide the users with the desired service levels, or to generate a change in the endowment of strategic resources shared by different institutions in a region. Also, the previously said first layer end-results—affecting both liquidity and equity, and strategic resources generated by management routines— are outcome measures. [...]. Outcome measures imply that a longer time horizon and broader system boundaries are adopted to measure and manage them, in respect to output indicators".*

According to this definition, outputs refer to the direct, short-term, tangible and measurable results while outcomes refer to some rather long-term results, effects and consequences which are usually non-measurable and not easily observable. In our model, the outputs identified include: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Admitted Patients*; *Costs*; *Errors*; *Failure & Mortality Rates*; *Hospital Spending*; *Investments*; *Waiting List for Surgery or Admission*; *Waiting Time in ER & Outpatient Services*; and the outcomes include:

Complications; *Incoming Patients*, *Informal Payments for early Surgery/Admission*; *Nosocomial Infections Rate*; *Patient Satisfaction*; *Survival Rate / Patients' Health Status & Quality of Life*.

10.1.3 Performance Drivers

The last step in this process would be to identify *Performance Drivers.* According to Bianchi (2016), *Performance Drivers* can be calculated in terms of the ratios between the company's *Strategic Resources* and a target, which can often be articulated in terms of either stakeholder expectations or perceived historical organizational performance. Indicators of performance in our model are the model variables that are expressed as ratios between the actual performance of a given variable (nominator) and a denominator described in our model as a standard (or normal or desired) value for performance of this variable, calculated in relation to either the perceived past performance, or the desires of stakeholders, or international benchmarks, or the performance of other hospitals, or in relation to the implementable goals of the hospital (budget values). In our model those performance indicators are: *Actual Number of Nurses or Doctors*; *Actual Time Available per Patient/Task*; *Availability of Equipment, ICT, Standard Procedures & Digital Forms*; *Approved Budget*; *Available Beds*; *Bed Occupancy*; *Difficulty of Shift Schedule*; *Doctor or Nurse-Patient Ratio*; and *Length of Stay*.

As those performance indicators could constitute both *Performance Drivers* and performance indexes, another major thing that we considered during our analysis was to separate *Performance Drivers* (PD) from Performance Indexes (PI), which is a common problem in DPM. According to Bianchi (2016, p.83) "*Performance indexes are synthetic measures of the quality or state of a system. Like Performance Drivers, they are usually expressed as ratios. While drivers affect end-results or other Performance Drivers, indexes do not affect any specific performance measure. They rather gauge a synthetic expression of specific aspects regarding performance. Therefore, while Performance Drivers are relevant measures for performance management, performance indexes can be relevant for performance measurement only".* Thus, in order to decide whether or not each of those indicators constitutes a performance driver or a performance index, we checked if in our model each of those indicators affect end-results or other *Performance Drivers*.

As shown in our models (i.e., the *Conceptual Model of Hospital Performance* and the *Policy Model of Hospital Performance* available in Appendixes 21 and 22 respectively), all the performance indicators identified are directly affecting *End Results* or other *Performance Drivers*. This means that they are all *Performance Drivers*.

10.2 The DPM Dynamic View: Operationalizing the Instrumental View from Static to Dynamic

Our analysis so far, in accordance with the DPM framework (Bianchi, 2016, p.81) has emphasized on both end-results and *Performance Drivers*. All End-results, both outputs and outcomes, may only be influenced by *Performance Drivers* in the medium/long term. This means that there is a time delay between the moment that managers start manipulating a performance driver until the moment that a change in end-results will be documented. The "time" factor thus is important for our analysis, and is not easy to grasp by the static instrumental

DPM view. Thus, we need to operationalize the *instrumental view* from Static to Dynamic, and create the *Dynamic, Resource-Based View* of hospital performance.

As Bianchi (2016, p.81) mentions, *"a shift of mind is needed when a dynamic view of performance management is adopted".* As a first step to this transition, we tried to systematically categorise the model variables of the *Policy Model of Hospital Performance* into the categories of the DPM framework (*Strategic Resources, End Results, Performance Indicators*) taking into account the Donabedian (1988) framework as well. Thus, we created three subgroups:

1. Indicators of *Strategic Resources* (marked with brown colour). In this category we put all the model variables that correspond to the *structure* measures of hospital performance, i.e., measures related to human, financial, technological and other resources.

2. Indicators of *End Results* (marked with green colour). In this category we put all the model variables that correspond to *output* and *outcome* measures of hospital performance, i.e., measures related to clinical outputs and patients' level of health and satisfaction.

3. Indicators of *Performance Drivers* (marked with orange colour). In this category we put all the model variables that correspond to the *process* measures of hospital performance, i.e., measures related to patients-providers contacts and relations.

Below on Figure 33 we see the *Conceptual Model of Hospital Performance* after the categorisation of all the model variables in order to fall into one of those categories. Then we did the same thing for the *Policy Model of Hospital Performance*, in order to have a more holistic view of the system at hand. On Figure 34 we see the *Policy Model of Hospital Performance* after the categorisation of all the model variables in order to fall into one of those categories. End-results may only be influenced by *Performance Drivers* in the medium/long term. *Performance Drivers*, however, can be influenced and changed in the short run. The *dynamic view* helps us see that immediately, as the links that have a symbol with a double line mean that a major delay is involved in this process.

Both End-Results and *Performance Drivers* are required for the DPM system, as they provide decision-makers with signs of potential future shift in *End Results*. This helps the hospital managers interpret and calculate the consequences of an incident or the implications of a policy; show possible discrepancies on performance; and try to mitigate it. For this reason, performance measures could be helpful to foresee possible changes in the financial or clinical end-results of the hospital. When framed in a wider sense than budgetary control, transaction cost drivers can provide policy makers with valuable information for strategic planning, such as the opportunity to identify trade-offs in time (e.g., higher *Costs* for *Investments* and managerial capacity utilisation *Costs* in the short-term versus *Investments* in equipment, *ICT*, *Facilities* that would increase performance in the long run).

Figure 32. Hospital Performance Indicators

PERFORMANCE INDICATORS IDENTIFIED	VARIABLES AFFECTED BY THE PERFORMANCE INDICATOR	CATEGORISATION OF THE AFFECTED VARIABLES
Actual Number of Nurses or Doctors	1. Difficulty of Shift Schedule 2. Doctor or Nurse-Patient Ratio 3. Available Beds	PD or PI PD or PI PD or PI
Actual Time Available per Patient/Task	1.Proper Communication& Attendanceto Patients' Needs 2. Management Capacity 3. Adherence to Guidelines &Protocols 4. Errors	Process SR Process ER
Availability of Equipment, ICT, Standard Procedures & Digital Forms	1. Actual Time Available per Patient/Task 2. Adherence to Guidelines & Protocols	PD or PI Process
Approved Budget	1. Financial Resources	SR
Available Beds	1. Bed Occupancy	PD or PI
Bed Occupancy	1. Admitted Patients 2. Waiting List for Surgery or Admission	ER ER
Difficulty of Shift Schedule	1. Actual Number of Nurses or Doctors 2. Adherence to Guidelines & Protocols 3. Errors	PD or PI Process ER
Doctor or Nurse-Patient Ratio	1. Actual Time Available per Patient/Task	PD or PI
Length of Stay	1. Bed Occupancy 2. Complications	(PD or PI) ER

10.3 Cascading the DPM Instrumental View from the Hospital Level to the Divisional Level

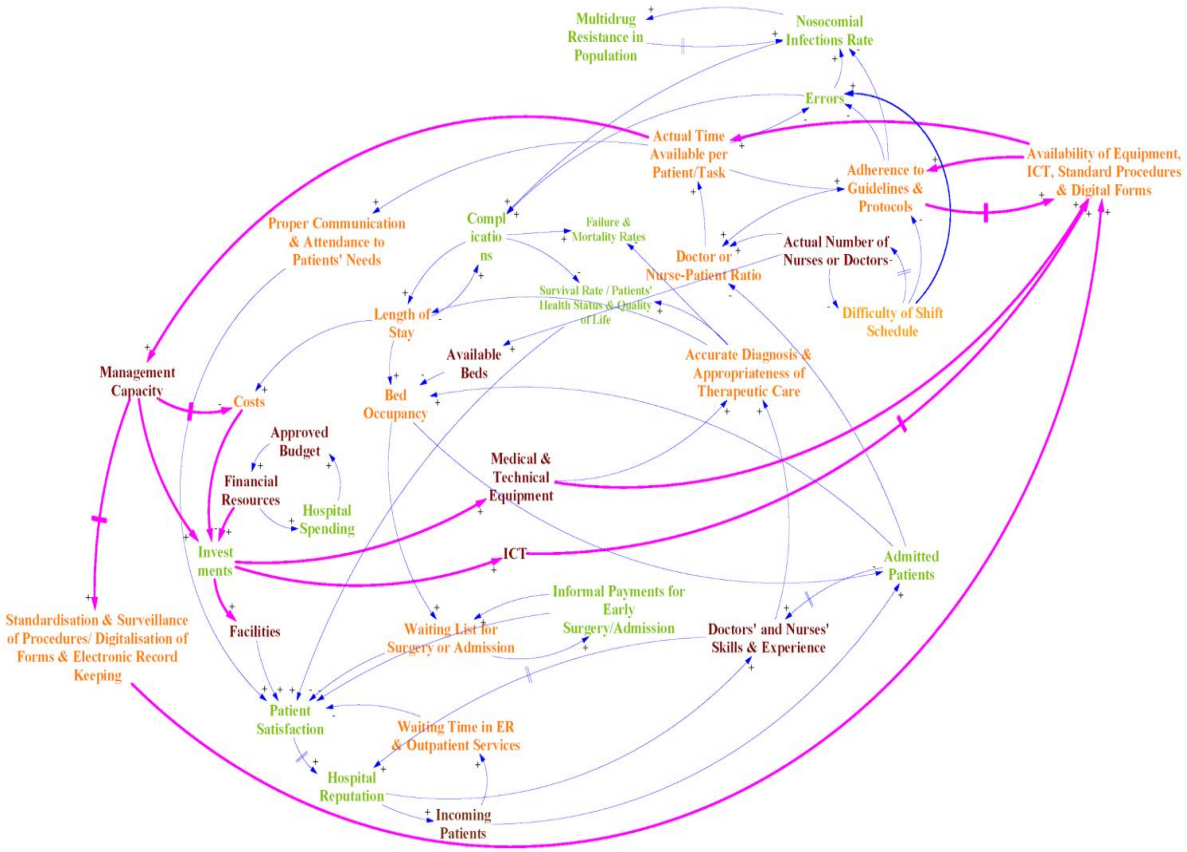
As we analysed in chapter 6.2, the case hospital - as most hospitals in Greece - consists of four divisions: the Medical, the Nursing, the Administrative & Financial and the Technical division. All four divisions are equal to each other, and each one has its own independent structure, departments and department supervisors, independent units, independent offices and staff. Obviously, not all of those departments, offices and units directly provide care to patients. Many of them are supporting the units that directly provide care to patients (e.g., the blood analysis laboratories) or conduct certain administrative and back-office operations (e.g., administrative offices, payroll and human resources department, etc.). Those units produce *intermediate products* to the advantage of the units, departments and divisions which produce the "final" products and services for patients. Consequently, in respect to the final products and services, it is possible to define a system of intermediate products arising from the mechanisms being carried out by each decision-making unit whose "clients" are internal to the hospital, i.e., other hospital units, departments or divisions.

Figure 33. The DPM *Dynamic View* of the Conceptual Model of Hospital Performance

Understanding the effect of back-office units on the final hospital services produced, especially in the public hospital, is an integral step towards better hospital performance, efficiency and transparency. Thus, there is the need to change our focus from the hospital level to the divisional level. Cascading the DPM *instrumental view* from the hospital level to a divisional level can allow the division managers to start concentrating on the core intermediate, *administrative products* that divisions are required to deliver on the process that leads to the final end-results, the outputs and outcomes. This assessment provides the ground for the DPM *objective view*.

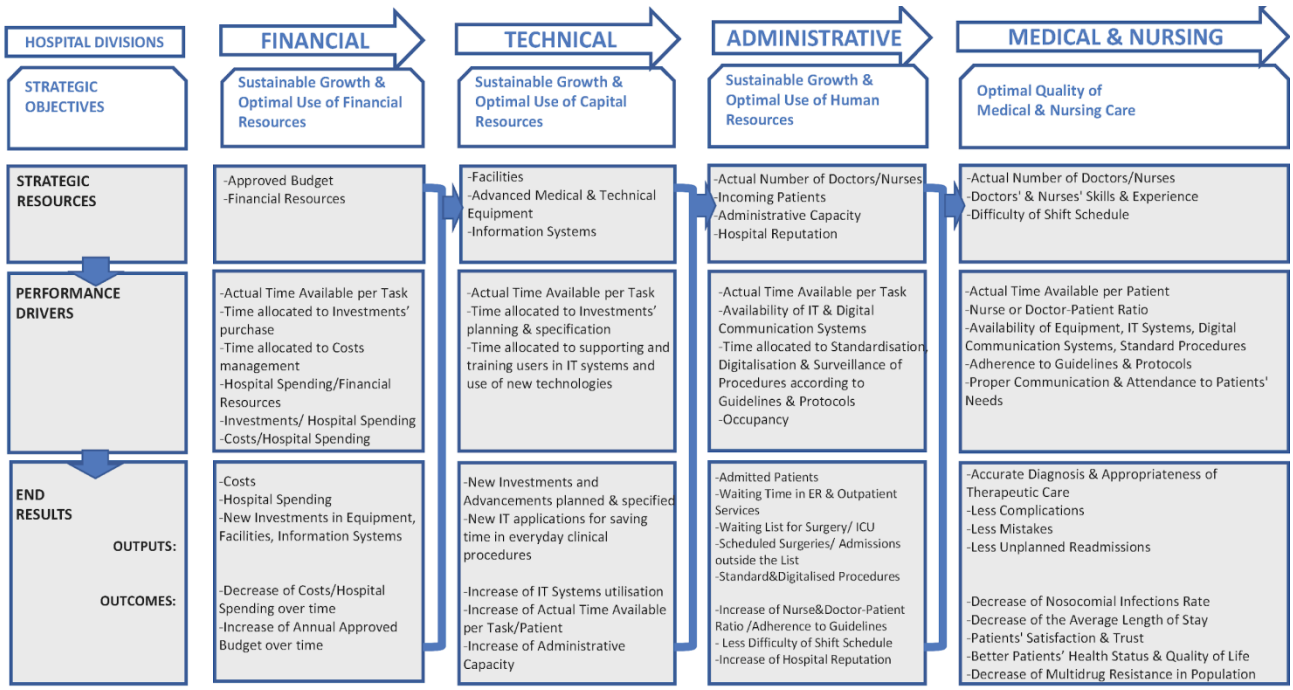
To do that, we should first identify administrative products, i.e., the measurable results of the tasks performed by both the back office and the front office units. As we mentioned in chapter 10.1.2, end-results in our model are: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Admitted Patients*; *Costs*; *Errors*; *Failure & Mortality Rates*; *Hospital Spending*; *Investments*; *Waiting List for Surgery or Admission*; *Waiting Time in ER & Outpatient Services*; *Complications*; *Incoming Patients*, *Informal Payments for early Surgery/Admission*; *Nosocomial Infections Rate*; *Patient Satisfaction*; *Survival Rate / Patients' Health Status & Quality of Life*. Now we will categorise those end-results dividing them between final end-results (i.e., products and services provided to patients) and intermediate end-results (i.e., products and services provided by some users, departments or units to other users, departments or units inside the hospital).

Figure 34. The DPM *Dynamic View* of the Policy Model of Hospital Performance



In our model, final end-results include: *Incoming Patients*; *Admitted Patients*; *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Failure & Mortality Rates*; *Waiting List for Surgery or Admission*; *Waiting Time in ER & Outpatient Services*; *Patient Satisfaction*; *Informal Payments for early Surgery/Admission*; *Survival Rate / Patients' Health Status & Quality of Life*; *Nosocomial Infections Rate*, whereas intermediate end-results include: *Costs*; *Errors*; *Hospital Spending*; *Investments*; *Complications*. On Figure 34 below the DPM *instrumental view* in a Divisional Level is summarised.

Figure 35. The DPM *Instrumental View* on a Divisional Level



10.4 The DPM Objective View

Cascading the DPM *instrumental view* from the Hospital level to a Divisional level provided the ground for the DPM *objective view*, which is analysed in this section, and is used to map the ultimate and intermediate services value chain provided to both external and internal users of the case hospital. Although we will not go much into detail for each department and unit of the case hospital, as something like that would be out of the scope and purposes of the current study, we will show the procedure and steps that should be followed from division managers, department and unit managers in order for them to map the ultimate and intermediate services value chain of their division, department or unit.

One of the premises of the DPM analysis is that the usual emphasis of the goals and success metrics entirely on the performance of the hospital clinics and patient front-office - which are directly treating and handling patients - and on the services directly provided by those departments is myopic, and can contribute to inconsistencies in the division of liability inside the hospital as well. This is because back-office units will not be

kept responsible for the effect of their results provided to other units, and therefore their added value and contribution to the final performance and quality of healthcare services provided to patients will not be measured.

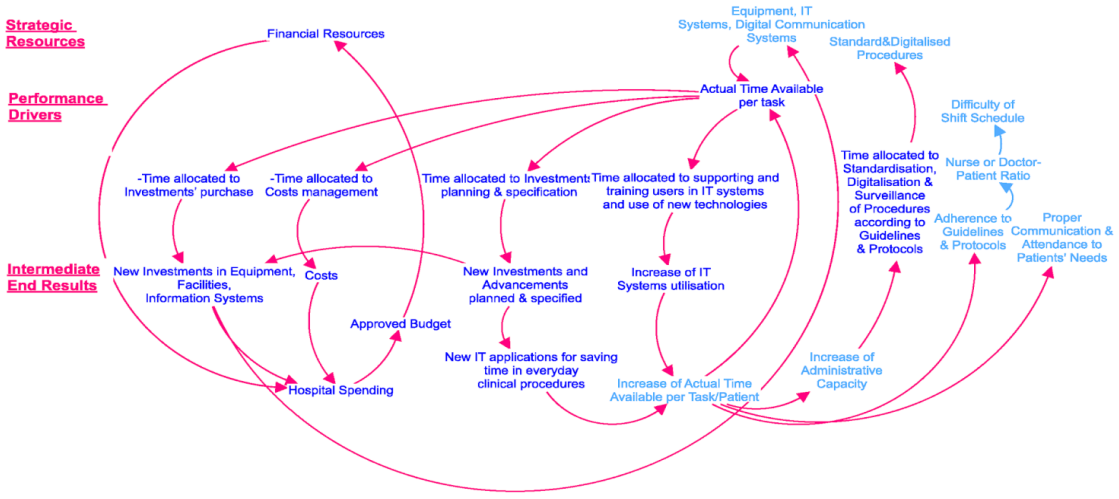
As a consequence, the implementation of a sustainable performance management system requires a complete mapping of the ultimate and intermediate products value chain provided to both external and internal users. It also requires that the underlying mechanisms, domains of accountability, dedicated resources and policy levers be rendered clear. These requirements can be defined as an *objective view* of performance management.

The recognition of "products" and their associated macro-processes that characterize the *objective view* improves the capacity of the policy planners and stakeholders to increase the emphasis of the *Performance Drivers* initially outlined at the corporate/divisional and departmental level, according to the *instrumental view*. By following this perspective, it is possible to consider not just what performance metrics each department should focus on and improve, in order to contribute to organizational results, but also how this can be made possible. The identification of macro-processes gives a suitable degree of synthesis through the *objective view*.

Identifying macro-processes often encourages an emphasis on cascading organizational *Performance Drivers* at the operational level through an *instrumental view*. The variables describing macro-processes of care and of the hospital function in our model are three mainly: *Adherence to Guidelines & Protocols*; *Proper Communication & Attendance to Patients' Needs*"; and *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*. For each of those macro-processes and for each division, department or unit of the hospital, a different DPM *objective view* analysis could be prepared.

Below on Figure 36 we present an example of such an analysis, on a divisional level, focusing mainly on the third macroprocess refered above, namely *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*.

Figure 36. Example of the DPM *Objective View* on a Divisional Level



In Figure 36 the performance driver *Actual Time Available per Patient/Task* is cascaded into four other *Performance Drivers*, one for each division or subdivision, namely: time allocated to *Investments*' purchase (responsibility of the administrative subdivision); time allocated to *Costs*' management (responsibility of the financial subdivision); time allocated to *Investments*' planning and specification (responsibility of the medical, nursing and technical divisions, in respect to whether the investment concerns medical or nursing equipment); time allocated to supporting and training users in *ICT* systems and to the use of new technologies (responsibility of the technical division). Those cascaded *Performance Drivers*, in turn, lead to the achievement of a number of intermediate results inside the different divisions or subdivisions (i.e., new *Investments* in equipment, new *Facilities* and *ICT*; new advancements planned and specified; increase of *ICT* systems utilisation; reduction of *Costs* and *Hospital Spending*. Some of those intermediate products then feedback to increase or decrease *Strategic Resources*.

10.5 The DPM Subjective View

According to Bianchi (2016, pp. 135) the DPM *subjective view* provides a synthesis of the *instrumental* and the *objective view* because it makes explicit, as a function of the pursued results, both the activities to undertake and the related objectives and performance targets to include in plans and budgets for each decision area. This view requires that performance measures - i.e., drivers and end-results - associated with the delivery of products are made explicit, and are then linked to the goals and objectives of decision-makers. *End Results* depend on the actions of the decision-makers, and provide a standard to be used for establishing priorities and goals in each division, department or unit. The actions and procedures to which those goals contribute should be aligned to the associated performance measures through a coherent action plan, by which resources are distributed to the organisation; the available policy levers for each decision area are rendered clear; and the accountability for the intended outcomes is directed to the responsible managers or workers. The remaining key problem concerns the need to clearly define performance measures to be assigned to decision-making areas for performance assessment in the budgeting and control processes.

As mentioned in chapter 6.2.1, according to the relevant internal documents collected and analysed (available in Appendixes 16 and 17) most of the goals of the Nursing and Administrative Divisions could not be considered "performance goals", as they were quite general and not explicit; they did not entail any time horizon; and, most importantly, they did not include any performance target. Thus, they cannot be considered as a helpful guide or tool for effective performance management. The risks associated with inappropriate goal-setting have also been studied, in particular by concentrating on behavioural inconsistencies that might be created for decision-makers (Bianchi, 2016).

For a successful DPM implementation, there is a need for concrete, measurable, attainable, appropriate and time-related goals (Bianchi, 2016). As mentioned in chapter 6.2.1, through the documents' analysis we identified four goals which we consider a bit more specific and - although they also did not entail any time horizon or any performance target - could be considered as a good start for our DPM *subjective view* analysis. Those goals were:

(1) Standardization of the nursing forms of the nursing departments and units

(2) Standardization of clinical procedures

(3) Use of an Information System in the Interdepartmental Communication

(4) Applying digital signature and electronic document management

Hereunder, we combine our findings from the documents' analysis presented in chapter 6.2 with the description of those goals as set by the division managers (available in Appendixes 16 and 17) and we inform them with the findings from our DPM *instrumental* and *objective* analysis so far, in order to identify the activities and resources which are needed for the achievement of each of those four goals.

(1) Standardization of the nursing forms of the nursing departments and units

According to the internal documents available in Appendix 16, actions for the achievement of this goal will be oriented towards the simplification of the procedures and the modernization of the management of nursing information, with the main criterion being quality assurance. Nursing forms concern internal communication of the nursing department (nursing history, patient's nursing accountability, departmental accounting, hospitalization card, work schedule, medical instruction sheet, etc.) and external communication with other nursing departments and with other units of the hospital (technical, administrative, medical units). According to the internal documents of the nursing division, the resources that division managers consider essential for the achievement of this goal are: *Financial Resources* concerning the supply of forms or the purchase of a computer-based program for the electronic application of some of them, after finalization and approval of the nursing forms, for a complete or partial application.

This goal (Standardization of the nursing forms of the nursing departments and units) corresponds to the model variable *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping,* and specifically refers to the macro-process of *Digitalisation of Procedures and Forms*. *Digitalisation of Procedures and Forms* is, according to our GMB participants, the rate at which the managers of the hospital's administrative, nursing and medical units and departments are working towards modernising and digitising the administrative procedures and the forms of their department/unit with the support of *ICT*, by creating digital nursing and medical forms - hopefully integrated into the hospital's information system (ERP) - in order for the patients' information to be easily, accurately and quickly filled in, signed and distributed in other units and departments of the hospital.

Subsequently, the nursing division managers of our case hospital believe that for the achievement of this goal (Standardization of the nursing forms of the nursing departments and units) only *Financial Resources* are necessary, whereas our DPM analysis (see Figure 36) shows that the macro-process of *Digitalisation of Procedures and Forms* requires other resources too, such as *ICT* and *Management Capacity*.

(2) Standardization of clinical procedures

According to the internal documents available in Appendix 16, the use of standardised clinical procedures in patient care is considered important for the effective and safe clinical practice; for the reduction of nosocomial

infections and costs; for the control, monitoring and evaluation of health professionals' work; as well as for increasing patients' trust in the delivery of nursing services. According to the internal documents of the nursing division, the resources that division managers consider essential for the achievement of this goal are: voluntary work and regular extra working hours for the development of the procedures, which should be financially covered.

This goal (Standardization of clinical procedures) corresponds to the model variable *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*, and specifically refers to the macro-process of *Standardisation of Procedures*. *Standardisation of Procedures* is, according to our GMB participants, the rate at which the managers of the hospital's administrative, nursing and medical units and departments are continuously getting informed and updated on the national and international guidelines and protocols regarding quality and safety during the delivery of care, and are "translating" those guidelines and protocols into easy, simple and standard procedures that their subordinates have to follow during the delivery of their (medical or nursing) practice.

Subsequently, the nursing division managers of our case hospital believe that for the achievement of this goal (Standardization of clinical procedures) only extra working hours and *Financial Resources* for them to be financially covered are necessary, whereas our DPM analysis (see Figure 36) shows that the macro-process of *Standardisation of Procedures* requires other resources too, such as *ICT* and *Management Capacity.*

(3) Use of an Information System in the Interdepartmental Communication

According to the internal documents available in Appendix 16, the use of an Information System in the Interdepartmental Communication within the nursing unit and among other units is necessary for the rapid distribution of information and the reduction of printed communication and paper usage, which will lead to cost reduction. According to the internal documents of the nursing division, the resources that division managers consider essential for the achievement of this goal are: Support from the Department of Organization and Informatics Department, including users' training for the correct and safe use of the information system, as well as the modernization of the technical equipment in all hospital sections and units.

This goal (use of an Information System in the Interdepartmental Communication) corresponds to the model variable *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*, and specifically refers to the macro-process *Surveillance of Procedures*. *Surveillance of Procedures* is, according to our GMB participants, the rate at which the managers of the hospital's administrative, nursing and medical units and departments are inspecting and monitoring the adherence to those standard procedures by their subordinates.

(4) Applying digital signature and electronic document management

According to the internal documents available in Appendix 17, digital signature and electronic document management is considered to help reduce operating *Costs* and enhance efficiency by reducing bureaucratic structures and man-hours, while enhancing transparency. It is an appropriate method for better operation of public services, which ensures speed - transparency - efficiency - cost reduction. Its application is based on two parameters: the economic parameter (reduction of man-hours, paper costs, etc.); and the administrative parameter

(reduction of the administrative time delays). According to the internal documents' analysis, the resources that are essential for the achievement of this goal are: voluntary work of regular employees, and extra *Financial Resources* for a support company's fee.

This goal (Applying digital signature and electronic document management) corresponds to the model variable *Availability of Equipment, ICT, Standard Procedures & Digital Forms*, and more specifically it refers to the availability of the *ICT* system. By *Availability of ICT, Standard Procedures & Digital Forms* participants mean the level at which the necessary Equipment, IT Systems, Digital Communication Systems and Standard Procedures are available, accessible, easily useable by the hospital staff, as well as that their use is being monitored and supported by the supervisors and managers. With this variable our GMB participants recognise the importance not only of the existence but also of the informed and active use of all those resources (Equipment, IT Systems, Digital Communication Systems, Standard Procedures), which they consider vital for their work and critical for the quality of healthcare services provided to the patients.

As far as those four goals are concerned, our DPM analysis informs the nursing division managers' statement with one more strategic resource, essential for achieving all those goals, namely *Management Capacity*, which is an intermediate product built with time by the public workers. According to our analysis, the performance driver of *Management Capacity* is the *Actual Time Available* that division managers and department managers have during their shift to devote to this goal. This is because *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping* in our model is a function of the variable: *Management Capacity*. The participant stakeholders of our GMB sessions agree that *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping* increases as the *Management Capacity* increases. This is because breaking down guidelines and protocols into steps of Standard Procedures & Duties requires adequate management competencies and specific, up-to-date knowledge.

10.6 Conclusions

Chapter 10 corresponds to the fourth research question of our study, namely: *What are the main Strategic Resources impacting hospital performance measures and what are the main Performance Drivers that are impacting intermediate products and end results.* In order to answer this question, in chapter 10 we performed the DPM analysis to identify those resources, drivers and indicators (summarised on Figure 32) and showed their role in the hospital performance management and measurement. More specifically, we used the Dynamic Performance Management Analysis in order to: (1) identify *Strategic Resources*, *Performance Drivers* and *End Results* of hospital performance and show their role in the hospital performance management and measurement; (2) show how the time factor influences the overall hospital performance; (3) understand the contribution of each one of the four hospital divisions (the Medical, the Nursing, the Administrative & Financial and the Technical division) on the *End Results* (i.e., the final hospital services produced); (4) allow the division managers to start concentrating on the core intermediate, administrative products that divisions are required to deliver on the process that leads to the final end-results; (5) map the ultimate and intermediate services value chain provided to both external and

internal users of the case hospital; (6) make performance measures (i.e., the drivers and end-results associated with the delivery of products) explicit, and are then link them to the goals and objectives of decision-makers of the case hospital; (7) discuss the insights that the DPM analysis offers us for a sustainable Performance Management in Greek public hospitals in general, and in the case hospital in particular.

Using the DPM *instrumental view,* we found that the drivers of hospital performance, according to our GMB participants, are: *Actual Number of Nurses or Doctors*; *Actual Time Available per Patient/Task*; *Availability of Equipment, ICT, Standard Procedures & Digital Forms*; *Approved Budget*; *Available Beds*; *Bed Occupancy*; *Difficulty of Shift Schedule*; *Doctor or Nurse-Patient Ratio*; and *Length of Stay*. All those indicators are expressed as ratios between the actual performance of the corresponding variable (nominator) and a denominator described in our model as a standard (or normal or desired) value for performance, calculated in relation to either the perceived past performance, or the desires of stakeholders, or international benchmarks, or the performance of other hospitals, or in relation to the implementable goals of the hospital (budget values). We showed that in order to impact *Performance Drivers*, each hospital division (i.e., the Medical, the Nursing, the Administrative & Financial and the Technical division) must build, maintain and use a sound endowment of *Strategic Resources* that are systemically connected to each other. Therefore, each strategic resource can provide the foundation for maintaining others in the system of hospital performance. In our model, those *Strategic Resources* are the variables: *Financial Resources*; *Facilities*; *ICT*; *Medical & Technical Equipment*; *Doctors' and Nurses' Skills & Experience*; *Hospital Reputation*; *Management Capacity*; and *Multidrug Resistance in Population*. The key in this analysis is to understand that the hospital can purchase the physical resources (i.e., *Financial Resources*; *Facilities*; *ICT*; *Medical & Technical Equipment*) but it cannot purchase *Doctors' and Nurses' Skills & Experience*; *Hospital Reputation*; *Management Capacity*. Those intangible resources are equally important as the physical resources for the overall hospital performance; however, they cannot be purchased. Instead, they are built by internal management and clinical processes of the hospital, and are called *intermediate products* of hospital performance.

Cascading the DPM *instrumental view* from the hospital level to a divisional level allows the division managers to start concentrating on the core *intermediate, administrative products* that divisions are required to deliver on the process that leads to the final end-results, the *outputs* and *outcomes*. To do that, we should first identify *End Results* and divide them between *final end-results* (i.e., products and services provided to patients) and *intermediate end-results* (i.e., products and services provided by some users, departments or units to other users, departments or units inside the hospital). In our model, *final end-results* include: *Incoming Patients*; *Admitted Patients*; *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Failure & Mortality Rates*; *Waiting List for Surgery or Admission*; *Waiting Time in ER & Outpatient Services*; *Patient Satisfaction*; *Informal Payments for early Surgery/Admission*; *Survival Rate / Patients' Health Status & Quality of Life*; *Nosocomial Infections Rate*, whereas *intermediate end-results* include: *Costs*; *Errors*; *Hospital Spending*; *Investments*; *Complications*. On Figure 35 the DPM *instrumental view* in a Divisional Level is summarised.

This assessment provided the ground for the DPM *objective view*, which we used to map the final and intermediate services value chain provided to both external and internal users of the case hospital, focusing on the *macro-processes* of hospital performance, which we found to be mainly three: *Adherence to Guidelines &*

Protocols; *Proper Communication & Attendance to Patients' Needs*; and *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*. For each of those macro-processes and for each division, department or unit of the hospital, a different DPM *objective view* analysis could be prepared. Although we did not go much into detail for each department and unit of the case hospital, as something like that would be out of the scope and purposes of the current study, we provided an example of such an analysis on a divisional level, of the procedure and steps that should be followed from division managers, department and unit managers in order for them to map the ultimate and intermediate services value chain of their division, department or unit, available on Figure 36.

Outputs refer to the direct, short-term, tangible and measurable results, while outcomes refer to some rather long-term results, effects and consequences which are usually non-measurable, not easily observable, but most important than outputs for the overall hospital performance. In our model, the outputs identified included: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Admitted Patients*; *Costs*; *Errors*; *Failure & Mortality Rates*; *Hospital Spending*; *Investments*; *Waiting List for Surgery or Admission*; *Waiting Time in ER & Outpatient Services*; and the outcomes included: *Complications*; *Incoming Patients*, *Informal Payments for early Surgery/Admission*; *Nosocomial Infections Rate*; *Patient Satisfaction*; *Survival Rate / Patients' Health Status & Quality of Life*.

All the *End Results*, both outputs and outcomes, may only be influenced by *Performance Drivers* in the medium/long term. This means that there is a time delay between the moment that managers start manipulating a performance driver until the moment that a change in end-results will be documented. The "time" factor, thus, is rather important for our analysis, but not easy to grasp by the static, *instrumental* DPM view. Thus, we needed to operationalize the *instrumental view* from Static to Dynamic, and create the *Dynamic, Resource-Based View* of hospital performance. Using the DPM *dynamic view*, we showed how the *End Results, Strategic Resources* and *Performance Drivers* are interrelated in the *Conceptual* and the *Policy Models of Hospital Performance* (available in Figures 33 and 34 respectively), in order to have a more holistic view of the system of hospital performance. End-results may only be influenced by *Performance Drivers* in the medium/long term. *Performance Drivers*, however, can be influenced and changed in the short run. The *dynamic view* helps us see that immediately, as the links that have a symbol with a double line mean that a major delay is involved in this process.

Finally, the DPM *subjective view* provided a synthesis of the *instrumental* and the *objective view* because it made explicit, as a function of the pursued results, both the activities to undertake and the related objectives and performance targets to include in plans and budgets for each decision area. However, for a successful implementation there was a need for concrete, measurable, attainable, appropriate and time-related performance goals. As mentioned in chapter 6.2.1, through the documents' analysis we identified four such goals of the case hospital managers, i.e., (1) Standardization of the nursing forms of the nursing departments and units; (2) Standardization of clinical procedures; (3) Use of an Information System in the Interdepartmental Communication; and (4) Applying digital signature and electronic document management. We combined our findings from the documents' analysis presented in chapter 6.2 with the description of those goals as set by the division managers (available in Appendixes 16 and 17) and we informed them with the findings from our DPM *instrumental* and

objective analysis so far, which allowed us identify the activities and the resources that are needed for the achievement of each of those four goals. In that respect, we found that – apart from the "tangible" strategic resources identified by the managers of the case hospital as essential in the achievement of each of those four goals - *Management Capacity*, which is an intermediate product built with time by the public workers, was equally necessary.

The identification of *Strategic Resources*, *Performance Drivers* and *intermediate End Results*, as well as the different *views* that our DPM analysis provided (i.e., *instrumental, dynamic, subjective, objective*) are equally important, as they provide hospital decision-makers with signs of potential future shift in *End Results*. The DPM analysis that we conducted can help public hospital managers in Greece interpret and calculate the consequences of an incident or the implications of a policy; show possible discrepancies on performance; and try to mitigate it. For this reason, the performance measures we identified could be helpful to foresee possible changes in the financial and clinical results of the case hospital, as well as of other public hospitals in Greece. When framed in a wider sense than budgetary control, transaction cost drivers can provide policy makers with valuable information for strategic planning, such as the opportunity to identify trade-offs in space and in time (e.g., higher costs for investments and for managerial capacity building in the short-run, versus investments in equipment, ICT, and facilities that would increase performance in the long run). Thus, the performance management policies adopted at the case hospital during the healthcare reform (i.e., structure and process reforms undertaken) and their overall impact for Greek public hospitals' outputs and outcomes, can now be examined through a different "lenses" by the hospital managers; lenses that will allow them overcome the counterintuitive, negative outcomes documented, which are inherent to the system of hospital performance, and align the hospital's and the different division's and departments' goals and actions to achieve improved efficiency and effectiveness, along with better hospital service quality for patients.

CHAPTER 11 – DISCUSSION & CONCLUSION

Chapter 11 corresponds to the fifth research question of our study, namely*: What are the practical implications of the study for policy design in Greek public hospitals*. In order to answer this question, in chapter 11 we summarise and discuss - using the existing literature - our findings and insights that the CLD model and the DPM analysis provided us with, for the sustainable enhancement of the case hospital performance. More specifically, in the section 11.1 we summarise and discuss our findings from chapter 6, regarding the traditional PM systems we found to be used at the case hospital. In the section 11.2 we summarise and discuss our findings from chapters 6 and 7, regarding the seven unintended consequences of the Greek healthcare reform that we outlined at the case hospital. In the section 11.3 we summarise our findings from chapters 8 and 9 and we offer an explanation for each of those seven unintended consequences, first by using the seven *Dynamic Hypotheses* we articulated based on the *Simplified Conceptual Model of Hospital Performance,* and second using the *Policy Model of Hospital Performance* themes. In the section 11.4 we show how hospital managers can overcome those unintended consequences of traditional PM systems in public hospitals, using the DPM analysis that we conducted in chapter 10. Finally, in the section 11.5 we offer the research contributions of our study and their practical implications for policy design in Greek public hospitals.

11.1 Traditional Performance Management at the Case Hospital

In this section we summarise and discuss our findings from chapter 6, regarding the traditional PM systems used at the case hospital. We found that goal-setting was the main PM strategy followed by the case hospital, provided by Law N4369/16, and that it is still today not properly implemented. Managers seem to treat performance objectives as completely separated from performance and quality, and to consider them as totally outside of their everyday tasks. Those findings of the preliminary interviews and documents analysis were validated from the findings of the pretests, conducted before the GMB sessions (presented in chapter 7.5).

Goal-setting was the main PM strategy followed by the case hospital, as provided by Law N4369/16. Indeed, the international literature on PM shows that goal setting is at the heart of the PM concept, as it is included in almost all the definitions of PM given from practitioners and scholars. For instance, Vignieri (2018) defines PM as *"a management style aimed at setting goals and ensuring that such targets are achieved through a planning and control cycle",* while Vainieri, Noto, et al. (2020) also recognise that it is by setting goals and by assigning and distributing resources and providing guidance to managers in order to reach those goals that PM becomes possible.

Despite the goal-setting procedure that took place in the hospital during the last year, and despite the existence of written statements of clear objectives in the nursing and administrative divisions, we found that goal setting according to Law N4369/16 is until today not properly implemented at the case hospital. In our view, one of the reasons for this was that most of the "goals'' set by the nursing and administrative divisions that our documents' analysis identified could not be considered as performance goals, but rather as the extension of the

hospital's mission. They were general and not explicit; they did not entail any time horizon and - most importantly - they did not include any performance target. However, for a successful PM implementation, there is a need for concrete, measurable, attainable, appropriate and time-related goals (Bianchi, 2016). Literature has demonstrated that organisations with specific goals, targets and priorities are doing better, and - as goal-setting in the public sector is much more vague than in the private sector (Moynihan & Pandey, 2005) - this relative uncertainty hinders performance. Setting specific targets and making expectations explicit is required by public sector managers to help workers properly grasp what needs to be done, and contributes to better results (Lee, 2019).

Furthermore, we found that - other than the division managers - no other employees or doctors and nurses were part of the goal setting process. However, this is vital for a proper implementation of the goals set. In fact, one of the most distinctive managerial competencies identified in the literature refers to the capacity to design the vision, mission and the long-term strategic goals; along with the effective diffusion of all those goals inside the healthcare organisation for the empowerment of the staff. Thus, information sharing, engagement of mid and low-level managers and the ability of top managers to engage low-level managers and communicate efficiently the goals and strategies is found to lead to better hospital performance (Vainieri, Ferrè, et al., 2019). Most importantly, the engagement of doctors is found to be critical for the success of any PM system in healthcare (Botje et al., 2016; Franco-Santos & Otley, 2018) and in order to engage clinicians, hospital managers need to provide them with appropriate, structured and continuous flows of information on performance outcomes, priorities and operational goal-setting (Vainieri, Ferrè, et al., 2019).

Nevertheless, we identified four goals set by the division managers of the Administrative and the Nursing divisions, which were a bit more specific and - although they also did not entail any time horizon or any performance target - were considered as a good start for the DPM analysis that we conducted: (1) standardization of the nursing forms of the nursing departments and units; (2) standardization of clinical procedures; (3) use of an information system in the interdepartmental communication; and (4) application of the digital signature and of electronic documents management. It is worth mentioning that those four goals also came up during the GMB sessions and were integrated in the CLD model that the participants built. Many of the policy interventions that participants came up with during the GMB sessions to improve hospital performance are similar to those four operational goals identified in our documents analysis. However, the preliminary interviews that we conducted with four of the participant stakeholders -including the two division managers- revealed that no further actions were taken in order to accomplish those objectives, neither by the managers nor from the employees of the two divisions. The interviewees seemed to treat those division goals as completely separated from what they consider to be performance and quality, and to consider them as totally outside of their everyday tasks; as something "more" to do, for which they hardly have any time to devote. Indeed, research on PM shows that if the objectives set have no connection with the real challenges and problems, and if employees are not part of the goal-setting procedure, then there is no stable base for pursuing goals and for improving performance (Bianchi, 2016).

Furthermore, according to our analysis, division managers might have ended up setting "easy" and "doable" objectives most of which, however, have little or no impact on performance. This view is confirmed by a number of studies on *"budgetary slacks"* and *"performance failures"* in public organizations (Ajibola & Akinniyi, 2013;

Andrews et al., 2006; Yılmaz et al., 2014) and support our view that goal-setting, the main PM strategy followed at our case hospital, might have been manipulated by managers. Such paradigms of "deviant behaviour" in the public healthcare sector reported by PM scholars include manipulation of goal-setting, by establishing too easy goals and working just to reach those goals, ignoring other, potentially more important factors (Bevan & Hood, 2006; Chang, 2007; Fryer et al., 2009). Supportive corporate environments, combined with specific priorities and missions, are crucial for inspiring workers to succeed, and are where management play an essential role in determining the culture of the company (Moynihan & Pandey, 2004; Peters & Bianchi, 2020). Adherence to organizational requirements and reporting is essential in the public sector to maintain oversight and accountability, with national and other regulations permeating the biggest part of the public agency's processes (Kalgin et al., 2018). All those findings reveal that PM was not successfully implemented in the case hospital and it certainly did not bring any tangible results for the hospital performance.

Hospital performance was defined by the participant stakeholders of the case hospital as *"the provision of patient-centred care to the patient, with safety (for the patients and the staff); responsibility (adherence to protocols, proportions and procedures) and dignity (nice and clean facilities, reduced waiting times and no informal payments)"*. This definition is in line with the *IOO* definitions of performance, presented in chapter 2.1.1. *IOO* definitions focus more on input, output and outcome, rather than on economy, efficiency and effectiveness (Bianchi, 2013, 2016). As we discussed in chapter 2.1.1, academics tend to define PM as a procedure, whereas practitioners tend to define PM as a toolbox of practices aimed at enhancing employee productivity (Lee, 2019). The definition that our participants gave consists of three components: safety, responsibility and dignity. In that sense, as the safety and responsibility components refer to procedures, we would say that our participants' definition is close to the academic definitions of PM, and even closer to that of Madlabana et al. (2020) who distinguish PM practices from PM methods, as the actual application and use of a PM method as opposed to theories relating to it. Furthermore, our participants' definition agrees with the widespread notion that performance seems to reflect the capacity of an organisation to produce sustainable outcomes with emphasis on both the quality of the process and the quality of the results (Vainieri, Noto, et al., 2020). Moreover, the three components of our participants' definition (safety, responsibility, dignity) reflect, in some degree, the dimensions of quality as perceived by users of a service, which are: Reliability, Empathy, Responsiveness. Assurance, Tangibility (Fayek, 1996; Parasuraman et al., 1985).

After goal-setting, the primary goal of traditional approaches to improving performance in Greek public hospitals, including our case hospital, is to hand out questionnaires and collect information from patients regarding their experience. In our case hospital, this information is gathered by the quality department and is kept there. After collecting and analysing those questionnaires, the department prepares an annual report which is handed in to the hospital directors. After that, our research showed that in our case hospital no further actions are taken to enhance performance. This is quite logical, as the patients' reflections might be helpful in showing possible areas for improvement, but are certainly not enough to determine what actions should be taken exactly, how they should be implemented and who should be involved.

The historical trend of the hospital performance in the case hospital was depicted by our GMB participant stakeholders in a diagram over time called *Reference Mode* (available in Appendix 19). The Reference Mode created and agreed upon by the participants showed that the level of the overall performance in the case hospital has been slightly increasing after the healthcare reform and is now stabilizing. This, however, might be just a misperception of the participant stakeholders. According to Werner et al. (2008b) performance measures may be correlated with improved performance for two different reasons: first, because measuring by itself directly improves performance on the activities that are measured, and second because those measures might act as indicators of the performance of other activities that - although not directly measured - they also contribute to the improvement of the overall performance. In their study, Werner et al. found proof that process measures of quality indeed act as intermediate indicators of performance of unmeasured outcomes, which are more important than the measured ones, in the sense that their impact on overall performance and quality of healthcare services is bigger (Werner et al., 2008b). This misperception of increased performance by the participants is further validated by the rest of our research findings, which outlined many unintended consequences at the case hospital and clearly showed that performance at the case hospital deteriorated, as a consequence of the PM policies implemented during the Greek healthcare reform, which are discussed in the next section.

11.2 Outlining the Unintended Consequences of the Greek Healthcare Reform at the Case Hospital

In this section we summarise and discuss our findings from chapters 6 and 7, regarding the negative outcomes of the Greek healthcare reform on the case hospitals' performance. In chapter 6 (section 6.1) we critically reviewed the Greek healthcare reform and found that the Performance Management policies introduced in Greek public hospitals after the reform influenced the structure and process of the delivery of care, such as personnel, equipment and management systems; as well as the outputs and outcomes, such as patient satisfaction and mortality rates. Hospital salaries, payments, administration, procurement and monitoring were largely addressed by the reform, and the hospital function was mainly affected negatively by: the serious cuts in the salaries of healthcare personnel, which caused job-dissatisfaction; the low nurses-to-patient ratios which became lower after the reform and resulted in many of them applying for early retirement, leaving the remaining ones to work overtime in order to cover all necessary shifts with fewer resources (e.g., drugs and sterilized equipment) and with fewer days-off; the new obligations for reporting and accounting (i.e., double-entry hospital accounting system, regular publication of audited balance sheets, use of a uniform coding system for medical supplies, introduction of hospital payments via the diagnosis-related group system, introduction of e-forms to hospital accounting) which resulted in increased workload for the remaining personnel; the fact that the vast majority of public hospitals remain without clear performance objectives, planning or control, despite the existence of an explicit legislative framework for goal-setting (Law N4369 /16) ; and the fact that the vast majority of public hospitals still operate without actual quality control of procedures and services, despite the existence of governing & regulating bodies for performance and quality assurance (i.e., Ministry of Health, Health Regions, National

Quality Institutions, Quality Committees of Public Hospitals) (Aiken et al., 2012; Economou et al., 2017; Keramidou & Triantafyllopoulos, 2018; Mitropoulos et al., 2018).

Although it might still be early to judge the long-term outcomes of the reform, the early signs from the limited research that exists are alarming. Researchers agree that there were negative consequences of the crisis, the austerity measures and the healthcare reform not only on the Greek populations' health (e.g., mental health problems, suicides, epidemics, deterioration of self-rated health, otorhinolaryngologic disorders, etc) but also on the healthcare system (Simou & Koutsogeorgou, 2014). Our literature review showed that after the healthcare reform, in Greek public hospitals: hospital service quality significantly deteriorated, as reported both by nurses and patients; hospital safety worsened and became poor or failing, as reported both by nurses and patients; nurses' burnout, job dissatisfaction, and intention to leave their work skyrocketed; patient satisfaction decreased; waiting lists and waiting times increased; communication with nurses and doctors was considered inadequate by the patients; the rate of under-the-table (informal) payments increased; hospital-related mortality rates increased; medical errors significantly increased; nosocomial and multidrug-resistant bacteria infections rates were extremely high; diffusion of clinical guidelines and treatment protocols remained weak (Aiken et al., 2012; Economou et al., 2017; Keramidou & Triantafyllopoulos, 2018; Mitropoulos et al., 2018).

Many of those findings were supported by our case study and by the findings from the preliminary interviews and documents analysis at the case hospital, which also confirmed that hospital service quality and performance has paradoxically deteriorated during the last decade (2010-2020) as a consequence of the new performance management policies implemented in the case hospital during the Greek healthcare reform (OECD & EU, 2020; OECD & European Observatory on Health Systems and Policies, 2019; Simou & Koutsogeorgou, 2014). Those conclusions agree with the findings of many other researchers who studied the results and impact of the Greek healthcare reform. The trade-off between the short-term, seemingly positive effect of cost-reduction versus the long-term, catastrophic impact of the Greek healthcare reform has been well-documented by many authors (Economou et al., 2017; Simou & Koutsogeorgou, 2014). According to Keramidou and Triantafyllopoulos (2018), for example, the reform seems to have undermined the efficiency and effectiveness of hospitals, and the ability of public hospitals to provide the best clinical outcomes possible with minor iatrogenic risks, according to their capacity. Thus, they concluded that *"there is a need for reforms aimed at the achievement of productivity gains, responsibility, and transparency in the management of productive resources, by enabling health organisations to reduce their costs without a deterioration in the quality of care"*. A systematic review of the literature published from January 2009 to March 2013 around the consequences that the financial crisis has had for health and healthcare in Greece also concluded that *"the recent efforts to reform the Greek National Health System have been focusing mainly on short-term effects by reducing expenditure, while the measures imposed seem to have dubious long-term consequences for Greek public health and healthcare"* (Simou & Koutsogeorgou, 2014). Seemingly, Economou et al. (2017) writes that "*While the preponderance of reforms implemented so far have focused on reducing costs, there is a need to develop this focus into longer-term strategic reforms that enhance efficiency, while guaranteeing the delivery of health services and improving the overall quality of care*".

The seven negative consequences of the Greek healthcare reform outlined in our case hospital are also in line with the international literature around PM reforms in the healthcare sector. The motives for the emergence of the NPM, the related reform initiatives and the degree to which they are successfully applied internationally has been widely researched, along with the effect of the 2008 global financial crisis on the roadmap for public policy change (Pollitt & Bouckaert, 2011). However, according to the researchers, there is no universal recipe for successful public management reforms, and none of the NPM practices can be considered "universal". Multiple control variables have been explored for their effect to performance and for their relevance to the effectiveness of modern public management practices, such as for example fiscal arrangements and their effect on the quality of public services (Cheng et al., 2020), but when inappropriately applied or incompetently implemented, they can lead to significant disadvantages (Arnaboldi et al., 2015; Bivona, 2010, 2015; Franco-Santos & Otley, 2018; Fryer et al., 2009; Noto et al., 2020; Vainieri, Ferrè, et al., 2019; Vainieri, Noto, et al., 2020). Many other researchers agree that in the healthcare sector, financial indicators are not enough to describe the overall performance of hospitals, because of the many particularities of healthcare that is not found in other sectors of production and services (Ravish, 2018; Wright & Hershman, 2013).

Based on the hospital's internal documents, the preliminary interviews with four of the participating stakeholders and the pretests that they were asked to fill in before the GMB sessions, our research (presented in chapter 6) showed that the PM policies introduced during the Greek healthcare reform had a negative impact on many aspects of Greek hospitals' performance in general, and on our case hospital's performance in particular. The new policies undeniably contributed to the reduction of hospital spending, but they simultaneously contributed to the deterioration of hospital service quality. More specifically, our research at the case hospital outlined the seven following negative outcomes of the reform policies to be present at the case hospital, according to the participant stakeholders of our GMB sessions: (1) Low Quality and Safety of Services perceived by health workers and patients; (2) Low Patient Satisfaction; (3) Informal Payments; (4) High Mortality Rates; (5) Numerous Medical Errors; (6) High Nosocomial & Multidrug-Resistant Bacteria Infections Rates; (7) Low adherence to Clinical Guidelines and Treatment Protocols. Furthermore, in chapter 7 we presented the CLD models of hospital performance (i.e., the *Conceptual Model of Hospital Performance*, and the *Policy Model of Hospital Performance)* which were the result of the collective discussions and activities with the participant stakeholders of our case hospital during the GMB sessions (i.e., hospital managers, doctors, nurses, paramedics and patients).

In contrast to most PM models that use KPIs, our model variables included *Strategic Resources*, *End Results* and *Performance Drivers* and showed the dynamic relationships between all of them, in accordance with the DPM framework (Bianchi, 2016). Our models, as we already explained, are qualitative System Dynamics Models called *Causal Loop Diagrams (CLDs)*, which contain variables and causal links and are used to display a sequence of cause-and-effect relationships between variables of a system (Forrester, 1961; Minyard et al., 2018; Richardson & Pugh, 1981; Sterman, 1989, 2000). A CLD is a way to systematically identify feedback loops (i.e., circular processes of a system where outputs are fed back into inputs), but more importantly it displays the shared narrative of the participants. Interestingly, we found that many of our variables are similar to famous KPIs which are widely used in PM of hospitals worldwide. Rahimi et al. (2017), for example, attempted to identify and

organise in a comprehensive way the most suitable key performance indicators (KPIs) for hospitals, using first an extensive literature review that identified 218 hospital performance indicators, and then the experts' panel and the delphi method to select the 22 most critical ones, which they subsequently divided into four categories based on the four BSC perspectives. Those 22 KPIs included, among others, the: average Length of Stay, the Bed Occupancy, the mean Length of Stay in the emergency department, the Mortality Rate, the bed turnover, the discharge rate, the (ER) waiting time, the hospital infection rate, the clinical Errors, the Patient Satisfaction, the cost of drags and materials, the personnel Costs, the staff turnover, and the Facilities for families and visitors. It is obvious that there are many similarities between those KPIs and our model variables, which strengthens the validity of our models and of our model findings. Furthermore, we found that many of our model variables (i.e., *Patient Satisfaction, Informal Payments, Failure &Mortality Rates, Errors, Nosocomial Infections, Adherence to Guidelines and Protocols*) are identical (in terms of names and definitions given by the participants) to the seven unintended negative outcomes documented at the case hospital, which also strengthens the validity of our findings. Hereunder we discuss those seven unintended consequences of the reform outlined, based on the existing literature and the CLD models that our stakeholders created.

(1) Low Quality and Safety of Services perceived by Health Workers and Patients

Those findings are largely confirmed by the literature around the negative consequences of the Greek healthcare reform. For example, three years after the beginning of the economic crisis in Greece, Aiken et al. (2012) conducted a study of cross-sectional surveys of nurses and patients in 12 European countries and the United States. The cross-sectional survey showed patterns of extremely high patients' perceived unsafety in Greek public hospitals. More specifically, it showed incredibly low patients' ratings of the hospitals in Greece, as well as the lowest rate of patients willing to recommend their hospital between all countries in the study (53% in Greece, compared to 78% in Switzerland that had the lowest score). This study also showed incredibly low quality of care as reported by Greek nurses, compared to all other countries. More specifically, 47% of the nurses in Greece reported poor or fair quality of care; the highest percentage compared to all other countries in the study, with Ireland having the lowest one (11%). Furthermore, one fifth of the respondent nurses gave their hospitals a poor or a failing safety grade. (Aiken et al., 2012). Furthermore, Greece had the first place in the rating of nurse-reported burnout (78% in Greece, compared to 10% in the Netherlands that had the lowest score), job dissatisfaction (56% in Greece, compared to 11% in the Netherlands that had the lowest score) and intention to leave (49% in Greece, compared to 14% in the US that had the lowest score). According to the authors "*nurses in Greece reported a particularly high level of nurse burnout, dissatisfaction, and intention to leave; nearly half of them described their wards as providing poor or fair quality of care, and almost one fifth gave their hospitals a poor or failing safety grade"* (Aiken et al., 2012).

Furthermore, according to the Eurobarometer studies of the European Commission during the last decade, as presented in Economou et al. (2017), Greek citizens' perceived unsafety in hospital care seems to be the highest in the EU, with as high as 83% of respondents in 2010 (the highest rate in the EU) and 78% in 2014 (the second highest rate in the EU) feeling that they will probably get harmed during hospital treatment. Greek citizens seem

to blame mostly clinical ineffectiveness, medical errors and hospital-acquired infections for their negative judgements regarding unsafety during hospitalisation (Economou et al., 2017), which largely confirms our findings from the CLD models' analysis. Finally, all those negative perceptions and assessments of patients and citizens seem to have worsened during the years after the crisis, with Greece showing the largest overall deterioration in citizens' assessment in the EU between 2009 and 2014 (Economou et al., 2017, p.140), a fact that is in line with our findings of the documents' analysis, pretests and preliminary interviews at the case hospital.

Figure 37. Latent Variables and Measurement Items for Hospital Performance. Adapted from: Keramidou & Triantafyllopoulos (2018, p. 357).

Latent Variables and Measurement items	
	Facility
CL1	Cleanliness of rooms
CL2	Cleanliness of bathrooms
CL3	Regularity of change towels & linen
F1	Quality of the food
F2	Variety of the food
T3	Relatives visiting hours
	Process quality
FQ1	Relationship with personnel
FQ2	Satisfaction with information
	Communication
INF1	Information on hospital services provided
INF2	Information about health problem
INF3	Medical advice on the behavior at home
	Understanding
D2	Doctors attitude – professionalism (courtesy, empathy, attention)
N2	Nurses attitude- professionalism (courtesy, empathy, attention)
	Responsiveness
D1	Availability of doctors
N1	Availability of nurses
	Outcome quality
TQ2	Best possible results owing to the existence of qualified and reliable staff
TQ3	Hospitalization results in health
OUT5	Readmissions to hospital
	Accessibility
T1	Waiting time for the access to hospital
T2	Waiting time for synergy
TQ1	Satisfaction with waiting times
	Competence
AC1	Accuracy of medical ward
AC2	Accuracy of medical intervention
	Reliability
R1	Avoiding medical error – infections
R2	Synergy without complications
	Overall Service Quality
SQ2	Services provided compared to previous admissions
SQ3	Service quality

Another nationwide survey conducted in 110 (out of the total of 124) Greek public hospitals, with 1872 patients discharged from those hospitals as participants, showed that the public hospital service quality as perceived by patients had a decreasing trend during the recession and still is at a medium level of 66.2 / 100 (Keramidou & Triantafyllopoulos, 2018). More specifically, those results showed that those 110 public hospitals were less effective at providing high-quality services during the economic crisis: in the 0–100 scale, the overall level of perceived hospital service quality was 68 between 2007–2008 (before the economic crisis and the implementation of the healthcare reform measures) and dropped to 65.7 between 2009–2014 (the years after the economic crisis and the reform implementation). The authors created a model with hierarchical structure for scale, in order to identify and explain separately different dimensions of care. We could say that their research - although based on patients' perceptions and not on clinical data - is somehow closer to the reality than other similar studies

of patient satisfaction and perceptions because their hierarchical model was capable of representing "…*criteria of high quality at a higher level of abstraction and relate them to the main dimensions of care at a lower level of abstraction, thus mediating the influence of good-quality criteria on the overall service quality"* (Keramidou & Triantafyllopoulos, 2018). Their model included three dimensions of care (facilities, process and outcomes), in agreement with the Donabedian categorisation (structure, process and outcomes) and six criteria of high service quality as determinants of structure, process and outcome quality. According to their framework, *access* influences perceptions of facilities or structure quality; *competency* and *reliability* influence perceived outcome quality; and *understanding, responsiveness,* and *communication* influence perceived process quality. Their study showed that after the reform all the three dimensions of care decreased, with the smallest reduction being documented in process quality, and the largest reduction in outcome quality; a reduction mainly attributed to the reduction in *reliability* and *competency* as perceived by patients. This is partly in line with our findings, as *reliability* and *competency* could be expressed by the variables *Doctors' and Nurses' Skills & Experience* of our CLD models which, however, is shown to have increased in our case hospital; nevertheless, this might not be the case for smaller hospitals in Greece, which were more thoroughly affected by the reform measures and thus might have experienced a deterioration in terms of skills mix of their staff.

(2) Low Patient Satisfaction

Although *Patient Satisfaction* is not necessarily an accurate indicator of quality of care (Mitropoulos, et al., 2018), several Eurobarometer studies have highlighted the high patient dissatisfaction in Greece, with 73% of the respondents in 2014 thinking that the quality of public hospital services is worse than in other EU countries. The cross-sectional survey by Aiken et al. (2012) also showed similar patterns of high patient dissatisfaction in Greece, as we mentioned in the previous section.

Patients are generally dissatisfied with the quality and responsiveness of health care, including the widespread, under-the-table (informal) payments; the weak primary care and the absence of a referral system; the long waiting lists and the inadequate geographical coverage. Research has showed that all those pre-existing problems were magnified by the recession and the impact of the austerity measures (Economou et al., 2017, p. 134), which is probably what led to a decreasing trend of patients' perceptions of adequate hospital services quality during 2007-2014 (Keramidou & Triantafyllopoulos, 2018). This is supported by our study, as informal payments and long waiting lists came up in our research and were included in our model as factors that deteriorate *Patient Satisfaction*.

Furthermore, a recent nationwide, inpatient survey in Greek public hospitals after the healthcare reform indicated that the communication with nurses is the most salient predictor of the overall patients' satisfaction, followed by the communication with doctors and the hospital environment (cleanliness and quietness), while certain patient (age and health status) and hospital or institutional (type and location) characteristics also contribute significantly to patients' perceived overall satisfaction (Mitropoulos et al., 2018). Communication and responsiveness to patients needs and many of the latent variables and measurement items identified by Keramidou and Triantafyllopoulos (2018) agree with our model variables and definitions that the participant stakeholders of

our GMB sessions gave, presented in Appendix 24, which is something that validates our models and supports our results.

(3) Informal Payments

Corruption, in the form of the widespread, under-the-table informal payments, constitutes one of the biggest challenges of the Greek healthcare system, raising serious concerns about accessibility and barriers to health care services. Studies have shown that under-the-table payments for the provision of hospital services – all of which are supposed to be free of user charges - mainly take the form of informal payments to physicians (usually surgeons) so that patients can bypass waiting lists or ensure more attention from doctors and, assumingly, better quality of care, while the frequency of such payments reported is at least one in every three patients (Economou et al., 2017, p. 62; Souliotis et al., 2016). Those findings are in line with our results, as the variable *informal payments,* and the definition that the participant stakeholders of our GMB sessions gave to it, presented in Appendix 24, largely agree with the literature.

Seemingly, Souliotis et al. (2016) found that under-the-table payments take place in approximately 32.4 % of public hospital admissions. Out of the 2741 individuals that took part in their survey, almost two thirds of the ones who had consumed health services over the past 12 months admitted having made informal payments, and that those under-the-table payments had a substantial impact on their household budgets and living conditions. The study revealed that informal payments were most frequently made upon request of the public health worker (usually a physician) and prior to the service provision, in order to bypass waiting times or receive better quality care, which agrees with our the causal links of our model variable informal payments, presented in Appendix 24, as well as with our findings regarding informal payments.

Souliotis et al. (2016), however, state that in some cases payments were made after the treatment, without prior request of the public health worker or out of gratitude, which reveals the well-established "culture" of informal payments in Greece that contributes and sustains this negative effect. Although informal payments were present long before the financial crisis, their study showed that after the healthcare reform *"there is a growing unwillingness of citizens to pay informally and an increasing demand for these payments as a prerequisite for access to services or to redeem services provided"* (Souliotis et al., 2016). According to their estimations, under-the-table payments amounted to almost €1.5 billion in 2012, representing 28% of the total private expenditure on health in that year (Souliotis et al., 2016). Furthermore, new types of informal payments emerged as a consequence of the healthcare reform, and of some of the measures taken. For example, because of the measures taken to combat overprescribing, it became harder for patients seeking medication to get their prescriptions. ESY-contracted physicians took advantage of the situation and started charging an additional, under-the-table fee for prescribing; a service that is supposed to be free of user charges. In 2015, more than 47% of patients reported having made an informal payment ranging from €10 to €20 to ESY-contracted doctors in order to get a prescription (Economou et al., 2017, p. 62; Souliotis et al., 2016).

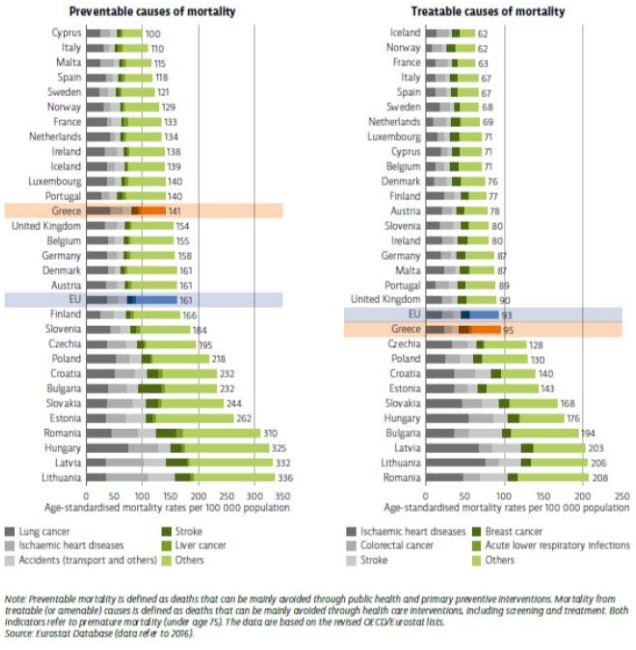
(4) High Mortality Rates

Until today, data regarding patient safety and quality of hospital services in Greece are very limited, due to the lack of monitoring systems in public hospitals and the absence of nationwide registries (Economou et al., 2017; OECD & European Observatory on Health Systems and Policies, 2019). However, there is some evidence that the healthcare reforms - which in public hospitals aimed mainly at cost saving and increased efficiency - had some adverse effects on the quality of healthcare services, and concerns have been raised regarding deteriorating standards of medical care because of the severe cuts (Economou et al., 2017, p.122; Karamanoli, 2012; Karidis et al., 2011).

In line with our findings, mortality rates seem to have increased after the healthcare reform. More specifically, mortality from treatable causes (an indicator that reveals shortcomings in diagnosis and treatment) and infant mortality rate (an indicator that is sensitive to both the quality of health care and socioeconomic conditions) has shown signs of worsening (OECD & European Observatory on Health Systems and Policies, 2019, pp. 3-5). More specifically: As shown on Figure 38, Greece's mortality rates from treatable causes was decreasing but reversed after 2000 for both men and women, reaching 95 for men and 93 for women per 100 000 population respectively in 2016, and hitting just above the EU average.

Figure 38. Mortality Rates in Greece and the EU.

Source: Economou et al. (2017).

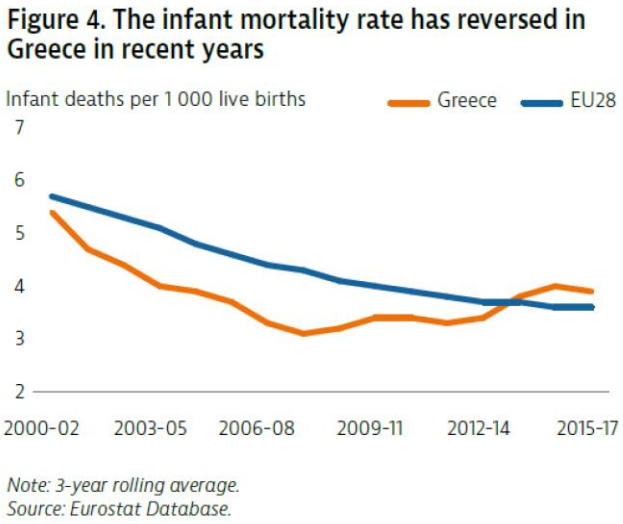


Infant mortality rate, on the other hand, was steadily decreasing until 2007 as shown on figure 39; remained constant between 2007-2009 at 3.1 per 1 000 live births; and increased to 3.9 between 2015-17, surpassing the EU average of 3.6 Then it peaked at 4.2 deaths per 1,000 live births in 2016 and reduced to 3.5 (just below the EU average) in 2017 (OECD & European Observatory on Health Systems and Policies, 2019, p. 5).

Another major study has shown that amenable mortality in Greece (an indicator that reflects quality and timeliness of medical care) experienced a small but significant increase in the years after the economic crisis, although it had been declining until then (Karanikolos et al., 2018).

Those findings are in line with our model results that revealed that Failure and Mortality rates at the case hospital are increasing, as a result of the policies implemented after the reform.

Figure 39. Infant Mortality Rates in Greece between 2000-2017. Source: Economou et al. (2017).



(5) Numerous Medical Errors

In line with our findings, research shows that medical errors are present in Greek public hospitals and that the invasive medical specialties show the highest rates of adverse events (Riga et al., 2014), despite the fact that there is no central national authority to which medical errors can be reported and, thus, only a small portion of adverse events are detected (Economou et al., 2017, p. 62). For example, a major study found that there was a significant increase in mortality from adverse events during medical treatment (an indicator that reflects the rate of medical mistakes during hospital treatment) after the onset of the economic crisis in Greece, causing more than 200 additional deaths per month which, according to the authors, *"might reflect the effects of deterioration in quality of care during economic recessions"* and *"could be explained by the serious shortages of medical staff and burnout among health workers in Greece"*(Laliotis et al., 2016). Those statements agree with our CLD model which links errors to the doctor & nurse-patient ratios, showing that the relative lack of doctors and nurses in relation to the admitted patients in clinics leads to the creation of more errors.

(6) High Nosocomial & Multidrug-Resistant Bacteria Infections Rates

Our CLD models' structure and findings are largely in line with the literature around the negative consequences of the Greek healthcare reform regarding the high nosocomial infections rates. What is rather

alarming, though, is that the rate of hospital-acquired infections, also known as nosocomial infections rate (one of the main quality indicators recognised internationally) in Greek hospitals is the highest in the EU and hits twice as high as the EU average, with one in ten patients developing this condition (OECD & European Observatory on Health Systems and Policies, 2019, p. 15). Furthermore, Greece is the second country (after Italy) with the highest score in multidrug-resistant bacteria infections in the EU, resulting in over 1 600 deaths per year (Cassini et al., 2019; OECD & European Observatory on Health Systems and Policies, 2019, p. 15).

(7) Low Adherence to Clinical Guidelines and Treatment Protocols

Our CLD models' structure agree with the existing literature that links nosocomial infections to adherence to clinical guidelines and treatment protocols. For example, in order to tackle the high rate of nosocomial infections, the Greek Ministry of Health has been lately trying to ally with medical associations in order to develop and introduce clinical guidelines and treatment protocols in routine medical practice (OECD & European Observatory on Health Systems and Policies, 2019, p. 15). The Hellenic Society of Obstetrics and Gynaecology created 25 new guidelines between 2013-2014, while some nursing protocols have been developed by the nursing faculties of Greek universities (Economou et al., 2017, pp. 121-122). Despite those efforts, still today diffusion and use of guidelines and protocols in Greek public hospitals unfortunately remains weak (OECD & European Observatory on Health Systems and Policies, 2019, p. 15). This again largely agrees with our findings, which highlight the low adherence to clinical guidelines and treatment protocols as one of the causes of the high nosocomial infections rate documented at the case hospital.

All those seven negative outcomes that our research highlighted at the case hospital, and which the literature confirms, are explained in the next section using insights from the CLD models that our participants created.

11.3 Explaining the Unintended Consequences of the Greek Healthcare Reform at the Case Hospital

Model Loops & Dynamic Hypotheses (*Simplified Conceptual Model of Hospital Performance)*

In this section we summarise and discuss our findings from chapters 8 and 9, regarding the seven *Dynamic Hypotheses* that we formed based on the *Simplified Conceptual Model of Hospital Performance* in order to explain the seven negative outcomes of the reform outlined at the case hospital. More specifically, in chapter 8, eleven feedback loops (seven reinforcing and four balancing) were identified, named and discussed. We found that, given the current policies of Cutback Management in place, loop R1 – Budgetary Control & Cutback Management is catastrophic for hospital performance in the long run, as it leads to a perpetual decrease of financial resources and purchasing power in the long run, leading to a lack of capacity by public hospitals to cover their needs. Given the long waiting lists that are already in place in all Greek public hospitals, as a result of the current policies, and given the widespread idea between patients that informal payments are necessary for a timely and proper treatment, loop R2 – Informal Payments & Corruption is catastrophic for public health in the long run, as it leads to a perpetual increase of private spending on healthcare and to the outspread of corruption between public hospital

doctors. Loop R4 - Length of Stay & Complications highlights the need for a short Length of Stay to avoid complications. Loop R5 – Multidrug Resistance in the General Population highlights the need for limiting Nosocomial Infections Rate using appropriate measures, in order to reduce multidrug resistance in the general population.

Furthermore, we found that Loop R3 - Doctors' and Nurses' Skills Building leads to a perpetual increase of skills mix and reputation for the already successful hospitals in the long run, and to a perpetual decrease for the currently unsuccessful ones; a well-known phenomenon in the system's literature known as the Success to the Successful archetype (Senge, 1990). Seemingly, Loop R6 – Clinical Efficiency & Hospital Reputation leads to a perpetual increase of clinical efficiency, accumulated intellectual and skills capital, reputation for the already successful hospitals in the long run, and to a perpetual decrease for the currently unsuccessful ones. Exactly as Loops R3 and R6, Loop R7 – Complications & Hospital Reputation leads to a perpetual increase of clinical efficiency, accumulated intellectual and skills capital, and reputation for the already successful hospitals in the long run, and to a perpetual decrease for the currently unsuccessful ones. Thus, loops R3, R6 and R7 are beneficial for big, urban hospitals that are generally better staffed and equipped, whereas catastrophic for the small, rural hospitals' performance in the long run; a well-known phenomenon in the system's literature known as the Success to the Successful archetype (Senge, 1990).

Finally, we found that all the four balancing loops B1, B2, B3 and B4 lead to a gradual decrease and stabilisation of patient satisfaction and of hospital reputation for the already successful hospitals in the long run; a well-known phenomenon in the system's literature known as the *Limits to Success archetype* (Senge, 1990). The balancing loops show that, paradoxically, a good hospital reputation is both a blessing and a curse, doomed to be deteriorated because of the adverse effects of: long waiting times; less attendance to patients' needs; more errors; and limited adherence to guidelines & protocols, all of which are inevitably generated in hospitals with good reputation and increasing volumes of incoming patients, causing their overall performance to decrease.

Such trade-offs between cost-reduction versus the long-term catastrophic impact on healthcare outcomes has been well-documented by many authors, and are supported by our literature review which identified a number of serious, unintended negative outcomes for hospitalised patients and personnel of public hospitals (Economou et al., 2017; Karamanoli, 2012; Karidis, et al., 2011; Keramidou & Triantafyllopoulos, 2018; OECD & European Observatory on Health Systems and Policies, 2019). Furthermore, similar trade-offs between short-term, seemingly positive effects of implemented policies and long-term, catastrophic outcomes are common in the systems literature as *systems archetypes* (Meadows, 2008; Meadows, Behrens, et al., 1974; Meadows, Meadows, et al., 1972; Senge, 1990). According to Senge (1990) *systems archetypes* are patterns of counterintuitive, recurring behaviour in organizations that have, most of the time, negative outcomes in the long term. The *Success to the Successful archetype* usually occurs when the two or more players are competing over limited resources, and the one that was initially the better performer is the one that continues to receive a comparatively higher distribution of resources at the expense of the other players (Senge, 1990). On the other hand, the *Limits to Success archetype* occurs when a policy initially produces promising results, because of the dominance of (one or more) reinforcing loops, but in the long term it approaches a limit that - no matter how much effort or resources managers

use – inevitably slows down the organisation's performance, because of the dominance of (one or more) balancing loops (Senge, 1990).

In fact, according to our findings, the balancing loops seem to be dominating at the moment at the case hospital, leading to the seven negative outcomes documented and in line with those two "archetypes" found in the systems literature. The seven *Dynamic Hypotheses (DH)* that we formed based on the feedback loops and the causal trees of the corresponding model variable can explain each of the seven counterintuitive negative outcomes documented at the case hospital. Those *Dynamic Hypotheses* are the explanations that we offer in order to explain why those seven counterintuitive outcomes occurred at the case hospital and in other hospitals in Greece. We call them *Dynamic Hypotheses* instead of "explanations" because in order to sufficiently test and prove them, a quantified SD model (a stock-flow diagram) would be needed, as that would enable us to run simulations and test our hypothesis in different scenarios to analyse the loop dominance. Such a model is not included in the present study, but is recommended for future research.

Thus, the seven negative outcomes documented at the case hospital are explained, according to our *Dynamic Hypotheses*, as follows: Safety and service quality is low at the case hospital because of the dominance of the loops B3 and B4, both of which lead to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* and of the *Adherence to Guidelines & Protocols* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at less *Proper Communication & Attendance to Patients' Needs*, more *Errors* and *Complications*, longer *Length of Stay*, higher *Nosocomial Infections Rate*, and, finally, to lower *Survival Rate* and *Patients' Health Status & Quality of Life* after treatment (Dynamic Hypothesis 1). *Patient Satisfaction* is low at the case hospital because of the dominance of the loops B1, B2, B3 and B4, all of which lead to a gradual decrease and stabilisation of patient satisfaction and of hospital reputation in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at less *Proper Communication & Attendance to Patients' Needs,* more *Informal Payments for early Surgery/Admission* longer *Waiting List for Surgery or Admission*, longer *Waiting Time in ER & Outpatient Services* and, finally, to lower *Survival Rate* and *Patients' Health Status & Quality of Life* after treatment (Dynamic Hypothesis 2). *Informal Payments* are high at the case hospital because of loop R2, which leads to a perpetual increase of private spending and to the outspread of corruption between the case hospital doctors, given the good reputation of the case hospital and the long waiting lists that are already in place. This phenomenon is sustained by the current policies in place, which favour the creation of long waiting lists, but is also sustained by factors external to the case hospital and to our model, such the relative tolerance of the Ministry of Health and of the authorities, and the widespread idea between patients in Greece that informal payments are necessary for a timely and proper treatment (Dynamic Hypothesis 3). *Failure & Mortality Rates* are high at the case hospital because of the dominance of the loops B3 and B4, both of which lead to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* and of the *Adherence to Guidelines & Protocols* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at less *Proper Communication & Attendance to Patients' Needs*, more *Errors* and *Complications*, longer *Length of Stay*, higher *Nosocomial Infections Rate*, and, finally, to higher *Failure & Mortality Rates* (Dynamic Hypothesis 4). *Medical*

Errors are increasing at the case hospital because of the loop B3 which leads to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* and of the *Adherence to Guidelines & Protocols* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at higher *Difficulty of Shift Schedule* for nurses and doctors, less *Proper Communication & Attendance to Patients' Needs* and, finally, to more *Errors* (Dynamic Hypothesis 5). *Nosocomial Infections Rate* is increasing at the case hospital because of the loops R5 and B4, both of which cause it to increase in the long run, resulting at more *Complications* and higher *Multidrug Resistance in Population* (Dynamic Hypothesis 6). *Adherence to Guidelines & Protocols* is low at the case hospital because of the loop B4 which leads to a gradual decrease and stabilisation at a low level of the *Actual Time Available per Patient* in the long run, as in the *Limits to Success archetype* (Senge, 1990), resulting at increased *Difficulty of Shift Schedule* for nurses and doctors, low *Availability of Equipment, ICT, Standard Procedures & Digital Forms* and, finally, to low *Adherence to Guidelines & Protocols* (Dynamic Hypothesis 7). In the next section, we will further discuss and support those findings based on the *Policy Model of Hospital Performance* and the existing literature.

Model Themes (*Policy Model of Hospital Performance)*

In this section we discuss the insights that the *Policy Model of Hospital Performance* created by the GMB participant stakeholders offers us. As this model contains a significant number of feedback loops, in chapter 8 the researcher created a simplified version of the model in order to make it possible to identify and analyse the basic feedback loops. Because of this simplification, many insights of the original model were not included in our analysis. For this reason, in this section we will present and discuss the four themes that emerged from the original *Policy Model of Hospital Performance* that our participants created (available in Appendix 22); explain some of the insights that those four themes provide us with; and discuss their implications for the hospital performance and for the design of better, context-specific and more quality-oriented performance management policies in Greek public hospitals.

Through the sessions we identified four main interrelated themes that are inherent to hospital performance, which are reflected in all our CLD models: Financing& Assets; Patient Satisfaction-related Processes; Managerial & Staffing Processes; and Outcomes &Clinical Efficiency. All those themes are represented in our *Policy Model of Hospital Performance* by a number of variables, and all four themes are interrelated with each other. Hereunder we present and discuss them using the existing literature.

(1) Financing & Assets

The first theme identified refers to the connection between financing, costs, spending and investments in assets (i.e., facilities, equipment and ICT). The model variables that belong to this theme are: *Approved Budget*; *Costs*; *Facilities*; *Financial Resources*; *Hospital Spending*; *ICT*; *Investments*; *Medical & Technical Equipment*.

This theme reflects the premise that when there are more *Financial Resources* available, there will be more *Investments* in assets, and because of the budgetary control PM policies implemented, this can only happen if *Costs* of consumables, materials, pharmaceuticals and services are lower than the *Approved Budget*. In fact, as we

mentioned in our literature review in chapter 2, the first healthcare reforms worldwide mainly focused on improving performance in terms of achieving better financial results; setting goals and responsibilities across the hierarchical structure of healthcare organisations; and maximising outputs, such as number of patients treated and services provided (Noto et al., 2020; Vainieri, Noto, et al., 2020). Budgetary Control was one of the first PM tools introduced during the reforms of the public healthcare sector worldwide, and is still widely used by many countries, including Greece (Arnaboldi et al., 2015; Noto et al., 2020). Particularly since the onset of the 2008 financial and economic crisis, many governments started introducing cutback management policies, i.e., policies which are contributing to a transition towards lower levels of activity and resources usage (Noto et al., 2020). In our view, this is exactly what the Greek healthcare reform was all about.

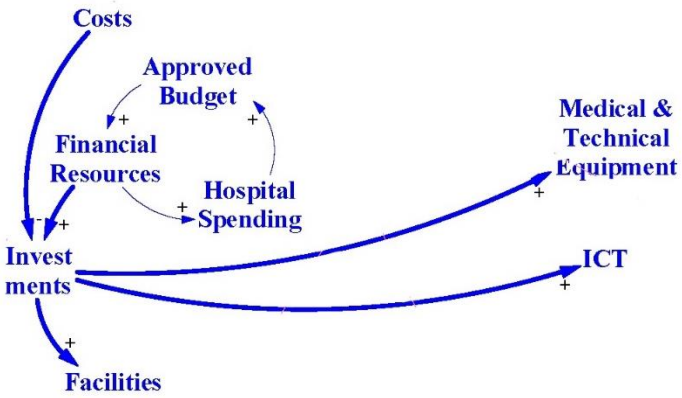
There are three main cutback management approaches: linear cuts, targeted cuts and the quest for productivity and efficiency gains (Ongaro et al., 2015; Pollitt, 2010). In our view, Greece has implemented targeted cuts, as some hospitals have suffered bigger cuts than others affected by the same policy according to the literature (Aiken et al., 2012; Economou et al., 2017; Keramidou & Triantafyllopoulos, 2018; Mitropoulos et al., 2018), which confirms our findings regarding the prevalence of the *Success to the Successful* archetype (Senge, 1990). As we mentioned in section 6.1.1, our literature review showed that after the healthcare reform, the annual budget of each healthcare entity (i.e., hospitals, health centres) is proposed by the relevant YPE (and then approved by the Ministry of Health) at the end of the previous fiscal year, based on the *Hospital Spending* of that same year, which is a measure that was adopted in an attempt to "sanitise" public spending by limiting expenses and gradually cutting off hospital budgets since the economic crisis and the austerity measures were initiated in 2009-2011. The Ministry's way to implement budgetary control is by checking the past year's spending and, according to that, issue the same or a slightly lower budget for the next year. Our *Policy Model of Hospital Performance* confirms this finding, and clearly shows that the *Approved Budget* increases as the past year's *Hospital Spending* increases.

Furthermore, in section 6.1.1 we mentioned that as charges for health services are calculated on the basis of a complicated reimbursement system and the reimbursement fees for the services have not been updated for years, hospitals and other public services run huge deficits every year, which are usually covered by the state budget in retrospect (Maniadakis, 2012). Our GMB participants confirmed this finding and mentioned that hospital managers can negotiate with the Ministry a slightly higher – or at least, a not lower budget – for the next year on the basis of the current (past year's) spending. Furthermore, they can sometimes justify budget overruns as "absolutely necessary" for the safety of patients and staff. Administrative limitations of the public system and legislation, though, makes such actions risky as any budget overrun is considered illegal by the current legislation and could lead to the managers' personal prosecution. Nevertheless, if they do not "illegally" overrun the budget during the current year, it is almost certain that next year their budget will be even lower, and so on.

For those reasons, according to our participants, priority is given at covering first the most essential needs (medicine, materials, etc) during the year, and then - at the end of the year and according to what is already spent - think about investing in medical or technical equipment. To this end, our *Policy Model of Hospital Performance* showed that the higher the costs of the non-durable goods and services, the lower the budget that will be allocated to potential *Investments*. Furthermore, at the end of the year and even if a hospital manager has the intention to

overcome the budget - and is willing to take the personal responsibility and risk to allow the extra spending - *Management Capacity* and capability of the administrative staff of the hospital to quickly absorb funds accordingly is not always guaranteed, according to our participants. Even if there are funds available for *Investments*, no *Investments* can be made without sufficient *Management Capacity*, as the procedures of supply management in public hospitals involve a lot of bureaucracy and know-how by department managers and the administrative personnel. Our research showed that capacity building is highly dependent on the actual time that managers have available during their shift.

Figure 40. Performance Theme 1: Financing & Assets



Thus, our research findings are confirmed by the research that shows that investments in Greek public hospitals have dramatically reduced during the last decade, after the budgetary control policies were implemented (Economou et al., 2017; OECD & European Observatory on Health Systems and Policies, 2019). *Investments* in *Medical & Technical Equipment* are generally considered critical as modern and advanced *Medical & Technical Equipment* leads to more *Accurate diagnosis & appropriate therapeutic care*, according to our *Policy Model of Hospital Performance*. Biomedical equipment technology is continuously being invented and improved and, as obvious, older machines are usually more invasive, less accurate and safe and come with limited capabilities and capacity in respect to more modern ones. Technical equipment, on the other hand, is associated with patients' safety during treatment by the participants.

Furthermore, according to our model the usage of information systems and digital communication can support the intradepartmental and the interdepartmental communications, and make the work of doctors, nurses and administrative staff much more effective and faster, compared to the way that they work now (i.e., filling in most of the paperwork and medical forms by hand and sending the hard copies back and forth to other departments for the communication of patients' details and exams results). This is in line with Vainieri, Noto, et al. (2020) who claim that PM Systems in public hospitals include not only the software and hardware used to store, monitor and process clinical data, but also the protocols, the practices, tools and methods used by clinicians, nurses, health

workers and administrative staff to handle patient flows; to admit and discharge patients; to record and communicate with other departments and/or other entities outside the hospital. However, such systems according to our GMB participants *"should be created for the users and thinking of the users, in order to make their life easier, not harder".* Our participants agreed that most of the time, users and department managers are not involved in the procedure of creating an IT application, which results in delivering applications which are not useful for users. Furthermore, even a user-friendly and useful, in that sense, application is difficult in the beginning for most users. Thus, IT support staff should be present after an intervention together with the staff, and help them learn how to use it. In line with our model and findings, the need for a user-friendly hospital data-management software that incorporates accurate electronic records of patients and robust data gathering tools is outlined by Botje et al. (2016) as necessary for the monitoring of hospital performance indicators and for the deduction of reliable conclusions, both for external and internal users.

Those findings are in line with Song and Tucker (2016) who discussed common barriers to Successful Implementation of PM Reforms in healthcare institutions. They identified four categories of barriers: barriers related to the internal environment, mainly insufficient physicians' and senior managers' support; barriers inhibited to the external environment, such as the legal environment, negative press about medical errors, payments and profitability; barriers related to the implementation process, e.g., when the final users of a new technology were not the ones who asked for it, when there is no reliable feedback on the progress and results of the reform available to the implementation team, and when there is insufficient training and technical support for the new process or technology to the staff ; and to the reform itself, i.e., when it is overly complicated, and when the necessary infrastructure is not in place (Song & Tucker, 2016). Among others, Klein and Knight (2005) also mention that when the PM reform is on a new technology and it was decided by the managers rather than by the users (top-down), then: (1) users/workers were not part of the design of the new PM System and there are more chances that it will be unreliable, defective or not that helpful to them, and (2) users were not the ones who asked for the new technology; thus, they will reject it and continue doing the work as they used to.

Finally, as most of the Greek public hospitals were constructed more than 40 years ago, the standards according to which they were designed and built do not respond to today's needs. The spatial distribution (e.g., the structure of examination rooms, the space autonomy of some departments like the ER, etc) was also mentioned by our GMB participants as important for the efficient handling of patients, and could also be achieved by *Investments* in renovation projects. However, *Investments* in physical *Facilities* are scarce in Greek public hospitals after the reform because of the budget limitations (Economou et al., 2017), a finding that is confirmed by our study. According to the participants, priority is given during the year at covering only the most essential needs of the hospital services (i.e., medicine, materials, extra personnel, etc) and then at the end of the year - and according to the budget limitations and the part that is already spent - managers decide upon possible *Investments*, giving priority, however, to *Investments* in *Medical & Technical Equipment* which are generally considered more critical.

(2) Managerial Efficiency & Capacity-Building Processes

The second theme identified refers to the managerial and capacity-building processes, and reflects the connection between the resources that the healthcare staff has available (i.e., the time and tools they have available) and the outputs that they produce. The model variables that belong to this theme are: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Actual Number of Nurses or Doctors*; *Actual Time Available per Patient/Task*; *Adherence to Guidelines & Protocols*; *Admitted Patients*; *Availability of Equipment, ICT, Standard Procedures & Digital Forms*; *Available Beds*; *Bed Occupancy*; *Difficulty of Shift Schedule*; *Doctor or Nurse-Patient Ratio*; *Doctors' and Nurses' Skills & Experience*; *Errors*; *Management Capacity*; *Proper Communication & Attendance to Patients' Needs*; *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*.

This theme reflects the premise that when there are more resources available to the healthcare staff (i.e., *Availability of Equipment, ICT, Standard Procedures & Digital Forms*), the staff will be more productive; they will most likely adhere to *Guidelines & Protocols*; and commit less *Errors*. However, productivity of the healthcare staff is influenced by their mental and physical health, training opportunities and job experience and this all highly depends on the hospital staff's capacity in respect to the volumes of *Incoming Patients*, which trigger a number of counterintuitive, negative outcomes for the hospital staff reflected on a number of performance indicators in our *Policy Model of Hospital Performance*, such as: *Actual Number of Nurses or Doctors*, *Actual Time Available per Patient/Task*, *Available Beds*, *Bed Occupancy*, *Difficulty of Shift Schedule*, *Doctor or Nurse-Patient Ratio*. Hereunder we will further analyse some of them.

The variable Actual Number of "Nurses or Doctors" was named like that because it represents two different numbers: The Actual Number of Doctors and the Actual Number of Nurses in the hospital, both of which are found to be critical for the analysis of the system of hospital performance. Our model is created by different kinds of participant stakeholders; thus, it is built in a way that it incorporates different views and it facilitates different kinds of analyses for different purposes and stakeholders. Depending on our perspective (i.e. if we are using the model to analyse nurse-related dynamics or doctor-related dynamics), the variable *Actual Number of Nurses or Doctors* represents either the actual number of nurses or the actual number of doctors. One major factor to consider is the *Actual Number of Nurses or Doctors* vs the Nominal Number of Nurses or Doctors. By naming this variable "Actual Number" of Nurses or Doctors participants make a clear distinction between the "nominal number" and the "actual number" of nurses and of doctors available in the hospital. The nominal number refers to the number of doctors and nurses that the hospital has "on paper", and this is the number that the hospital's management and the Ministry of Health has at hand and based on which they plan new recruitments. The "actual" number, however, is the number of "active" nurses and doctors, who are placed at the clinics – and not in the outpatient services of the hospital- directly treating patients and participating in the shifts and overnights schedule. This "actual" number is always lower than the nominal one, because of a variety of justified absences and longer or shorter periods of leaves of the medical staff (e.g., leaves for education reasons, parental or other personal reasons, health-related reasons, burn-out and sickness, birth leaves, temporary placements in other hospitals and health services to cover special needs there, etc.).

According to our GMB participants, nursing staff is the most problematic in this respect, with the biggest gap between the nominal and the actual numbers of active staff, for a number of reasons. We will mention some of the most important ones here, as described by our GMB participants; however, all of those reasons were left outside our scope of research and beyond the boundaries of our model. First of all, there is a big number of "inactive" nurses in Greek public hospitals, usually older nurses with chronic diseases (often musculoskeletal disorders, caused from the past years of hard nursing work) who are placed in the outpatient clinics and services of the hospital doing "light" work, such as administrative work or helping doctors in their outpatient clinics practice for administrative tasks, microsurgeries, etc. Secondly, from the potentially "active" nurses (i.e., nurses who are young and healthy enough to be placed in the clinics and deliver the "hard" work, directly treating patients and participating in the shifts schedule) the majority are women in their reproductive age, who are away (on maternal and other leaves) for around two years on average every time they give birth and who are not substituted while away.

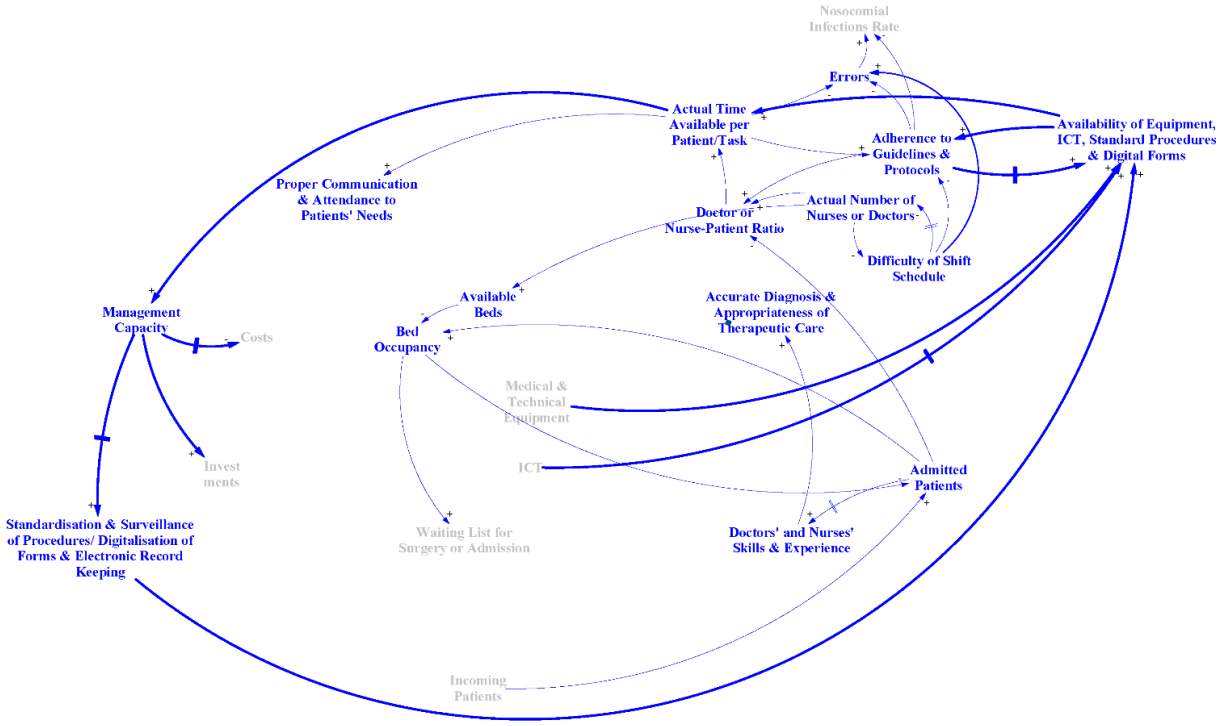
Those findings are confirmed by the literature around the measures of the Greek healthcare reform, which shows that nurses were disproportionately affected by those measures, probably because the nurse-to-patient ratio was already low in Greek public hospitals ((Economou et al., 2017; OECD & European Observatory on Health Systems and Policies, 2019). The new measures meant that graduate nurses would remain unemployed for up to four years upon graduation and that emergency nurses would have to work overtime, with fewer resources (e.g., drugs and sterilized equipment), with fewer days-off and lower salary than before the crisis, and with the prospect to work more years to receive a lower pension, which led many of them - together with many other healthcare workers - apply for early retirement (Simou & Koutsogeorgou, 2014). Furthermore, Greece has the highest number of doctors along with the lowest number of nurses per capita among OECD countries, which causes operational and service distortions and supplier-induced demand phenomena (OECD & European Observatory on Health Systems and Policies, 2019). The undersupply of nurses is particularly pressing in Greek public hospitals according to Economou et al. (2017), which is confirmed by our findings.

Seemingly, the variable Actual Time Available per "Patient/Task" was named so because it represents two different numbers: the Actual Time Available per Patient and the Actual Time Available per Task in the hospital, both of which are found to be critical for the analysis of the system of hospital performance. As mentioned above, our model is created by different kinds of participant stakeholders, thus it is built in a way that it incorporates different views and it facilitates different kinds of analyses for different purposes and stakeholders. Depending on our analysis (i.e., if we are using the model to analyse clinical efficiency-related dynamics or managerial efficiency-related dynamics), the variable *Actual Time Available per Patient/Task* represents either the actual time that nurses and/or doctors have available per patient, or the actual time that the administrative staff or the department managers has available per task.

One major factor to consider is the Actual Time Available per Patient/Task vs the Nominal Time Available per Patient/Task. By naming this variable "Actual" Time per Patient/Task, participants make a clear distinction between the "nominal time" and the "actual time" available during the shift of nurses, doctors and administrative staff. More specifically, the nominal time available during their shift is always eight hours as provided by law in

Greek public hospital. Thus, the nominal time per Patient/Task is always 8 hours divided by the number of patients (for doctors and nurses) or tasks (for administrative staff and managers) that they have under their responsibility and need to finish during their shift. On the other hand, the actual time available during their shift is the net time that the healthcare staff has available to spend on doing their own work/tasks, i.e. treating patients (for doctors and nurses) and doing their work/tasks (for administrative staff or managers), without counting the time they spend on: doing other people's tasks; waiting for technical problems to be fixed; waiting and not be able to do their tasks because of administrative delays and other delays that occur; searching for medicine or material that are not in place and they need to find and use; filling in administrative papers and forms; and any other kind of issues that they need to work on and resolve before starting doing their own tasks, which prevents them from getting their work done in due time. This actual time available is not stable and it varies depending on organisational factors, special circumstances of every hospital and department. Thus, the "*Actual Time Available per Patient/Task*" is the actual time that healthcare staff has available during their shift (which is not stable, as we explained above) divided by the number of patients (for doctors and nurses) or tasks (for administrative staff) that they have under their responsibility and need to finish during their shift.

Figure 41. Performance Theme 2: Managerial Efficiency & Capacity-Building Processes



Another major factor to consider is that the increase of *Actual Time Available per Patient/Task* leads to the increase of *Management Capacity*. This is because the managers' capacity to fulfil their long-term management duties depends on the part of the actual time that they have available during their shift to devote to those management tasks. When their time is mostly spent on administrative and clinical duties (which are usually more

urgent and more short-term and present-oriented), the time left for management duties (which are usually less urgent and more long-term and future-oriented) decreases and they are not able to build *Management Capacity* in the long term. More specifically:

Doctors and nurses who are supervisors or managers of their department in Greek public hospitals have clinical duties, administrative (short-term) duties and management (long-term) responsibilities, with the priority being given to the urgent clinical and administrative tasks which are related to the patients treatment and safety. When staff is overwhelmed by the limited actual time available, supervisors need to devote most of their worktime doing clinical and administrative work to help their subordinates, such as: helping in patients treatment, supporting staff, trying to make the shifts schedule as good as possible for all nurses and doctors, resolving conflicts and other problems that occur because of the limited actual time available. In this way, the time that doctors and nurses with a supervising role have available during their shift to focus on long-term management duties (e.g., for *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping; Surveillance of the increase of the Adherence to Guidelines & Protocols*; Quality and safety controls, etc) decreases.

The same thing applies to the managers and supervisors of the administrative personnel. During their 8-hours shift, they also have both operational (short-term) and strategic (long-term) responsibilities and goals, with the priority being given to the everyday, operational tasks. When staff is overwhelmed by the limited actual time available, supervisors need to devote most of their time doing operational (short-term) tasks, such as: reporting on problems; supporting staff; substituting missing employees; resolving conflicts and other problems that occur because of the limited actual time available. In this way, the time that administrative personnel with a supervising role has available during their shift to focus on strategic (long-term) work (i.e., *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*) decreases.

Furthermore, according to our participants *Adherence to Guidelines & Protocols* increases as the *Actual Time Available per Patient/Task* increases. This is mainly because, in their view, following guidelines is "a more time-consuming way of doing things", and thus the more the actual time they have available to finish all their tasks during their shift, the more willing they are to allocate some time on following the guidelines - provided of course that they already know how to do that, and have been educated and adequately trained to the implementation of those guidelines and protocols. Even if they know that they should be doing this task differently to be consistent with the guidelines, they might decide not to do it in the proper way, in order to earn some time and finish their shift on time. Moreover, some of the participant stakeholders mentioned that the more the actual time they perceive that they have available, the more relaxed they feel and the more probable it is that they will remember to stick to the guidelines. On the other hand, when they perceive that the actual time available during their shift is less than what they need, they feel under stress/pressure and in those conditions their mind might focus on finishing the core tasks and responsibilities, rather than on doing them properly by following exactly the guidelines.

Moreover, our research showed that *Adherence to Guidelines & Protocols* decreases, as the *Difficulty of Shift Schedule* increases. This happens for a number of reasons. First of all, the more difficult the shift schedule is

– meaning that the necessary rests are not respected - the more tired and sleepy the health workers might feel during their (especially night) shifts, and the more probable is for them not to follow the guidelines properly. Secondly, when the shifts schedule is such that the necessary rests are not respected, department managers are not willing to create and implement an Internal Regulation, which would increase adherence to guidelines by specifying the necessary medical equipment, duties, procedures, work distribution and maximum/minimum ratios to be respected, such as nurses to patient and doctors to patient ratios. Another reason is that the more difficult their shift schedule is, the less rest they get, the more tired they feel and the more negatively their well-being and personal life is affected. This results in limited motivation for effective work, as well as in limited time and willingness to get more education and training. Lack of education and training, in turn, could mean lack of knowledge and/or capacity to implement protocols/guidelines and lack of awareness of the importance and the risks associated with the non-adherence to them.

Those findings are in line with the international literature around health workers' motivation, commitment and performance, which has been described as a significant factor of the overall hospital performance (WHO, 2012, 2016). The shortage of skilled healthcare staff in public hospitals, especially in low-income countries, and the extra burden that this shortage creates to the available staff; the fragmentation and lack of coordination of the healthcare services; the ineffective use of resources; and the low quality of clinical data collection and management have been identified, among others, as co-determinants of health-workers' performance (Mensah et al., 2016; Suifan, 2019; WHO, 2012, 2016; Zaadoud et al., 2018). Especially for the Greek public healthcare personnel, the impact of the Greek healthcare reform on their personal well-being was quite strong, as they experienced 15% cuts in all public sector salaries, abolishment of the thirteenth and fourteenth monthly salary, 10% cuts in their pensions and increase in their retirement age (Simou & Koutsogeorgou, 2014). Furthermore, limiting recruitment of healthcare personnel led to understaffing of all public institutions. Subsequently, hospitals, such as all other public bodies, were constrained to operate with 10–40% fewer workers whose salary had been cut by 40% in total (Simou & Koutsogeorgou, 2014). For most public institutions, such as public hospitals, the most vital resource is their human resources: their skills, experience and expertise; their managerial capacity for problem-solving and policy implementation (Arnaboldi et al., 2015). In health and social services, NPM reforms have resulted in increased workload, with fewer and demotivated staff, increasing levels of stress and fatigue, high absenteeism and labour turnover, while the bureaucracy of the audit society, in which boxes must be ticked to demonstrate compliance with targets is continuing to grow (Arnaboldi et al., 2015; Funnell, 2015; Kaupa et al., 2020).

Finally, according to the GMB participants, the number of *Available Beds* does not refer to the physical number of beds as facilities, but to the number of "active" beds depending on the number of "active" doctors and nurses available. In other words, the number of *Available Beds* in clinics and ICUs as well as the number of available surgical banks is not stable, but it dynamically changes depending on the actual number of "active" nurses and doctors. As each admitted patient occupies one of the *Available Beds*, the number of *Admitted Patients* equals the number of covered beds in the clinic in which he/she is admitted, and in the hospital. Thus, the maximum number of *Admitted Patients* at a certain moment in time cannot be higher than the number of *Available Beds* in the clinic in which he/she is admitted and in the hospital. In 2015 there were 4.3 hospital beds per 1000

population according to the statistics of the World Health Organisation[45] and in 2017 the number dropped to 4.2 - somewhat below the EU average of 5.0 - but physical and human resources are not equally distributed, both geographically and in terms of skills mix (OECD & European Observatory on Health Systems and Policies, 2019). Of the 283 hospitals existing in 2014 (excluding military and prison hospitals), around 60% of all beds were located in Attica (which includes the capital city of Athens) and in central Macedonia (where Thessaloniki, Greece's second largest city, is located). Furthermore, the high intransparency and discontinuity of the system creates accessibility issues (Economou et al., 2017).

(3) Patient Satisfaction-Related Processes

The third theme identified refers to the connection between *Patient Satisfaction*, *Hospital Reputation* and the effects of patient volumes on waiting times. The model variables that belong to this theme are: *Hospital Reputation*; *Incoming Patients*; *Informal Payments for early Surgery/Admission*; *Patient Satisfaction*; *Waiting List for Surgery or Admission*; *Waiting Time in ER & Outpatient Services*. *Patient Satisfaction* increases as *Facilities*, proper communication and attendance to their needs and survival rates increase, as a result of other processes in the system.

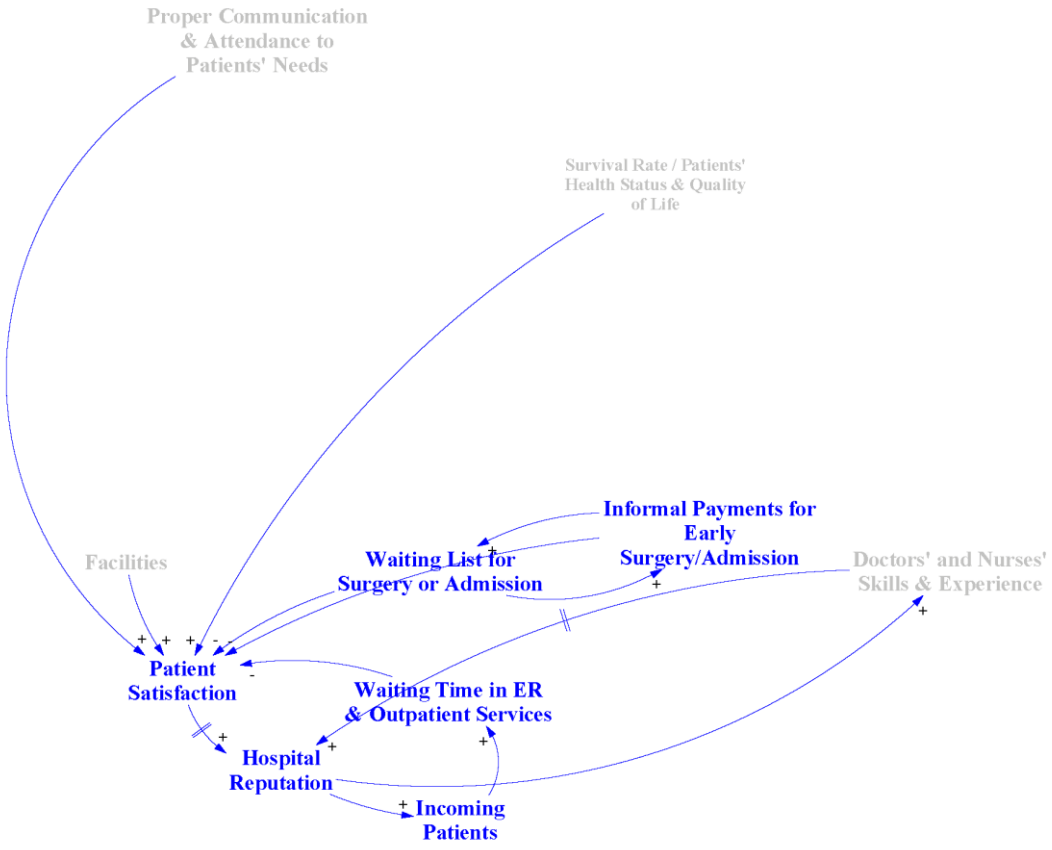
This theme reflects the premise that when *Patient Satisfaction* is high, and in turn *Hospital Reputation* increases, then the volumes of *Incoming Patients* increase and some positive effects (e.g., *Doctors' and Nurses' Skills & Experience* increase) but also a number of counterintuitive, negative outcomes will follow, both for the hospital staff (as we saw in theme number two) and for patients (e.g., long waiting lists for surgery or admission, long waiting times in ER and outpatient services of the hospital, informal payments), which will finally cause *Patient Satisfaction* to decrease.

The rate of *Incoming Patients* increases as the *Hospital Reputation* increases. Obviously, a hospital with a good reputation is more likely to be chosen by patients for their routine controls or for a minor surgery or treatment. Furthermore, according to our participants, some patients are attracted to the hospital because of a specific doctor, thus they are obliged to visit the hospital where this doctor works and be treated there. Since almost all public hospitals have the same *Facilities*, patients in Greece most of the time choose a doctor - not a hospital - for an important surgery or the treatment of a chronic disease, and they choose based on the doctor's reputation which is spread through word-of-mouth (i.e., they ask friends, relatives or other doctors for advice on *"who is a good doctor for that kind of treatment/surgery").* In those cases, the reputation of the hospital doctors' skills and experience is what attracts patients at the hospital, and in the long term this also builds on the *Hospital Reputation* through the word of mouth. For that reason, we did not include in our model a separate causal link for this element, but we indirectly imply and include this element in the causal link between *Hospital Reputation* and *Incoming Patients*.

[45] See: https://apps.who.int/gho/data/node.country.country-GRC?lang=en

Doctors' and Nurses' Skills & Experience increase as the *Admitted Patients* increases. This is logical, as more *Admitted Patients* means more patients under treatment, and the more patients there are, the more cases doctors and nurses have to work on, gaining more experience and skills. However, *Waiting Time in ER & Outpatient Services* also increases as the Number of *Incoming Patients* increases - especially in the ER. This is because the more the *Incoming Patients* at a certain period (e.g., a day in the ER), the more work for a fixed number of nurses and doctors will it be and – since they cannot all together be examined at once – the more they will need to wait. This applies not only to waiting in the Emergency Room (where patients might need to wait for many hours or days to be examined) but also to the outpatient services of the hospital, where patients call in advance and book an appointment and might need to wait for months or even year(s) for the first appointment available. Those waiting lists are very hard to eliminate, according to our model, as their existence is inherent to the system of hospital performance, and thus they are resistant to policies that target them. Those findings are supported by the international literature on common "pitfalls" in healthcare institutions. Bevan and Hood (2006), for example, mention the case of waiting lists for surgery in public hospitals in England, which the government tried to reduce by starting measuring the average time in the list and linking hospital managers' performance on those measurements. The managers indeed succeeded to improve the waiting times but this improvement was made on the cost of the real patients' needs, by giving priority to simple surgeries and making the patients with significant surgeries (such as hip replacements) wait longer than before.

Figure 42. Performance Theme 3: *Patient Satisfaction*-related Processes



Informal Payments for early Surgery/Admission are, according to our participants, the rate of patients' out-of-pocket, informal payments to public hospital doctors for scheduling their surgery or admission earlier, in order for them to avoid the long waiting time on the list. Since priority over the waiting list is given only to urgent cases, those patients get admitted in the hospital through the Emergency Department (ER) by getting characterised as "urgent cases", in order to get priority and avoid waiting on the list for surgery or admission in a specialised unit or department. Our GMB participants called this phenomenon "the suitcase effect" as those patients arrive in the ER with their suitcase, ready to be admitted. The rate of *Informal Payments for early Surgery/Admission* increases as the *Waiting List for Surgery or Admission* increases. This happens because, according to our participants, most of the patients do not like to wait long times for having an elective surgery or a necessary treatment, but most importantly because - depending also on the severity of their condition - they might feel that their health will deteriorate if they wait. Thus, they commit to paying the doctors out-of-pocket money, thinking that they will not get timely and appropriate treatment unless they do it. *Informal Payments for early Surgery/Admission*, in turn, leads to the further increase of the *Waiting List for Surgery or Admission*. This is logical, as before calling a patient on the waiting list to be admitted for a surgery, transplant or ICU, administrative staff needs to make sure that there are surgical banks as well as beds available in ICU and at the corresponding clinic. If some patients are characterised as "urgent cases" and are being given priority after giving informal payments to doctors, then all the patients on the waiting list will have to wait more time than otherwise and, in the meanwhile, more patients are being placed on the waiting list, increasing the average waiting time for all the patients on the list. Finally, *Informal Payments for early Surgery/Admission* leads to the decrease of *Patient Satisfaction*, which is quite logical as patients do not like being forced to pay out-of-pocket money for getting access to the public healthcare services which are supposed to be free of charge. Those findings are supported by the study of Souliotis et al. (2016) which revealed that informal payments in Greek public hospitals are most frequently made upon request of the public health worker (usually a physician) and prior to the service provision, in order to bypass waiting times or receive better quality care. Other examples of such deviant behaviours reported in the international literature include: accident and traumatised patients not entering the ER but waiting in the ambulances, so that the waiting time in the ER does not exceed the targeted one; trolleys in corridors being considered as beds, so as to present higher numbers of admitted patients (Bevan & Hood, 2006; Chang, 2007; Fryer et al., 2009) and informal payments to public doctors with long waiting lists, who are starting to eliminate patients from the waiting list by seeing them privately and personally gaining out-of-pocket money from those patients for doing what should be done in a public care setting without an extra charge for the patients (Fryer et al., 2009; Ranade, 1994).

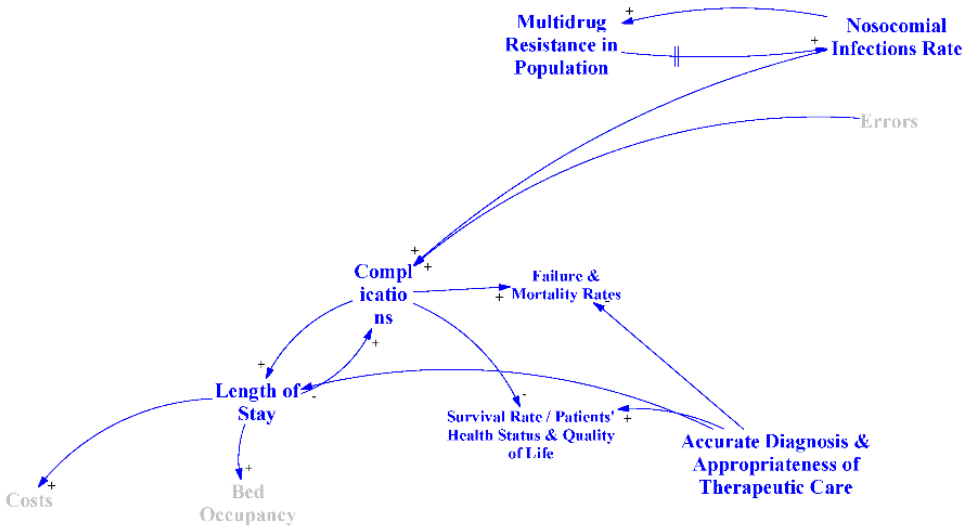
(4) Outcomes & Clinical Efficiency

The last theme identified is comprised of clinical outputs and outcomes, and shows how clinical outputs and outcomes (which are the end-products of the hospital function and are influenced by all the processes that we mentioned above, i.e., the financial, managerial, and patient satisfaction-related ones) feed back to the system of performance and, in turn, influence all processes (i.e., the financial, managerial, and patient satisfaction-related

ones). The model variables that belong to this theme are: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Complications*; *Failure & Mortality Rates*; *Length of Stay*; *Multidrug Resistance in Population*; *Nosocomial Infections Rate*; *Survival Rate / Patients' Health Status & Quality of Life*.

Although the scale of public hospitals and primary care entities and the complexity of financial management of the public sector leads public service entities to rely their PM Systems solely on budgetary control, experience has proven that this strategy is rather narrow-sighted, provides rough cost control as it ignores all the non-financial aspects of performance, and may contribute to adverse effects (Arnaboldi et al., 2015; Noto et al., 2020), which is in line with our findings. Furthermore, in our case hospital – as in other public hospitals in Greece - the budgetary control was accompanied by the lack of ability to refine the historical-based budget setting practices by introducing activity-based measures, which essentially compromised the rigour of the budgetary control as a PM tool (Arnaboldi et al., 2015). Moreover, the accomplishment of budgetary balance may be seen as a kind of progress, but in reality it is a constraint, according to the researchers, and it certainly is not synonymous neither to the provision of quality services, nor to the efficiency or effectiveness of the health organisation's operation (Arnaboldi et al., 2015). Research has demonstrated many cases where the implementation of linear and targeted cutback management policies might have created several unintended consequences for the efficiency of health systems, public governance and economic growth (International Monetary Fund, 2015; Legido-Quigley et al., 2016; Noto et al., 2020; Stuckler et al., 2017).

Figure 43. Performance Theme 4: Outcomes & Clinical Efficiency



As we mentioned in chapter 6.1.1, apart from the permanent staff of ESY who are directly paid a fixed salary by the central government, the Ministry of Health gives the option to the health entities which need extra personnel to hire them under fixed-term contracts of employment and pay them from the entity's *Approved Budget*. The restrictions in the recruitment of healthcare personnel after the Greek healthcare reform, which resulted at

serious understaffing of our case hospital and at serious cuts in the salaries of the healthcare personnel, triggered job-dissatisfaction, low morale and increased job leaves and absences, but they also led to hiring extra personnel under fixed-term contracts of employment to cover the urgent needs, which had to be paid from the hospital's *Approved Budget*. This severely augmented the costs, and prohibited investments according to our CLD model. The exact same mechanism is recorded in Italy. Noto et al. (2020) analysed data of a regional health authority in Italy and found that, while Italian regional health services have succeeded to minimize workforce expenses – achieving the performance target set – management of their overall expenses was not completely addressed. Overall, the initiative adopted by the central government had the consequence of restricting the decision-making power of the regional authorities, motivating them to transfer funds from manpower to the procurement of extra services (Noto et al., 2020).

Our research showed that an Internal Regulation would not only be serving as a tool to increase adherence to guidelines and protocols, but would also serve as a "protective shield" for the nurses or doctors of the department, by prohibiting the Nurse-Patient and Doctor-Patient Ratios from going above a maximum. However, our findings from the preliminary and the disconfirmatory interviews revealed that most department managers are not willing to create and implement such a regulation out of fear; fear of the extra responsibilities that this would bring and fear of exposure of potential mistakes. Bevan and Hood (2006) in their study presented similar evidence from the public healthcare sector in England. According to their findings, English public health service authorities and officials that are gathering performance data do not use them in practice for performance improvement purposes; paradoxically, all those measurements are completely detached from the real decision-making; selective reporting is a persistent temptation for public healthcare organisations managers; and fear of exposure of mistakes committed and of the criticism or the legal consequences that might follow creates incentives for gaming, manipulating or distorting the information and data gathered. Seemingly, Franco-Santos and Otley (2018) mention the example of a UK Hospital Trust where *"the overreliance of senior staff on the hospital's PMS led to an organizational culture focused on doing the system's 'business' (e.g., hitting performance targets), resulting in patient neglect and high mortality rates. Paradoxically, a system aimed at facilitating the delivery of high-quality patient care and healthy lives, ended up creating the opposite results"*. The authors raise awareness that this case is not an unusual one, and that similar negative effects are reported in the PM literature and practice (Franco-Santos & Otley, 2018), which is highly supported by our research findings as well.

11.4 Overcoming the Unintended Consequences of the Greek Healthcare Reform at the Case Hospital: Applying the DPM Approach for a Sustainable Improvement of Hospital Performance

In this section we summarise and discuss our findings from chapter 10, regarding the application of the DPM framework at the case hospital in order to overcome the unintended negative outcomes of the traditional PM approaches implemented after the Greek healthcare reform. Thus, this chapter will discuss a non-conventional conceptual and methodological framework, the DPM framework, to assist hospital managers at designing

successful interventions for the sustainable enhancement of the hospital's overall performance and for the provision of quality-services to patients, leading to improvement of patient satisfaction, health and quality of life.

In order to deal with the unintended consequences of the reform outlined in the previous chapters, policy-makers and hospital managers should wear "proper lenses" to view the low performance and the low patient satisfaction reported; to interpret the negative consequences arising from the PM systems and policies implemented during the Greek healthcare reform; to explain the feedback structure underlying performance; and to define alternative strategies to change the PM structure and policies. To this end, our *Policy Model of Hospital Performance* and its analysis using the DPM framework has been used to promote an interpretation of: (1) how *End Results* (i.e., outputs and outcomes of the hospital services) are influenced by *Performance Drivers*; (2) how those *Performance Drivers* can be influenced by policy levers to control *Strategic Resources*' accumulation and depletion mechanisms; and (3) how the *Strategic Resources*, in turn, affect *End Results*, including not only the outputs of hospital services but - priorly and most importantly - their long-term outcomes, such as the patient satisfaction and patients' health and well-being.

Using the DPM *instrumental view*, we found that the drivers of hospital performance, according to our GMB participants, are: *Actual Number of Nurses or Doctors*; *Actual Time Available per Patient/Task*; *Availability of Equipment, ICT, Standard Procedures & Digital Forms*; *Approved Budget*; *Available Beds*; *Bed Occupancy*; *Difficulty of Shift Schedule*; *Doctor or Nurse-Patient Ratio*; and *Length of Stay*. All those indicators are expressed as ratios between the actual performance of the corresponding variable (nominator) and a denominator described in our model as a standard (or normal or desired) value for performance, calculated in relation to either the perceived past performance, or the desires of stakeholders, or international benchmarks, or the performance of other hospitals, or in relation to the implementable goals of the hospital (budget values). We showed that in order to impact *Performance Drivers*, each hospital division (i.e., the Medical, the Nursing, the Administrative & Financial and the Technical division) must build, maintain and use a sound endowment of *Strategic Resources* that are systemically connected to each other. Therefore, each strategic resource can provide the foundation for maintaining others in the system of hospital performance. In our model, those *Strategic Resources* are the variables: *Financial Resources*; *Facilities*; *ICT*; *Medical & Technical Equipment*; *Doctors' and Nurses' Skills & Experience*; *Hospital Reputation*; *Management Capacity*; and *Multidrug Resistance in Population*. The key in this analysis is that hospital managers understand that the hospital can purchase the physical resources (i.e., *Financial Resources*; *Facilities*; *ICT*; *Medical & Technical Equipment*) but it cannot purchase *Doctors' and Nurses' Skills & Experience*, *Hospital Reputation*, or *Management Capacity*. Those intangible resources are equally important as the physical resources for the overall hospital performance; however, they cannot be purchased. Instead, they are built by internal management and clinical processes of the hospital, and are called *intermediate products* of hospital performance.

Cascading the DPM *instrumental view* from the hospital level to a divisional level allows the division managers to start concentrating on the core *intermediate, administrative products* that divisions are required to deliver on the process that leads to the final end-results, the *outputs* and *outcomes*. To do that, hospital managers should first identify *End Results* and divide them between *final end-results* (i.e., products and services provided

to patients) and *intermediate end-results* (i.e., products and services provided by some users, departments or units to other users, departments or units inside the hospital). In our model, *final end-results* included: *Incoming Patients*; *Admitted Patients*; *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Failure & Mortality Rates*; *Waiting List for Surgery or Admission*; *Waiting Time in ER & Outpatient Services*; *Patient Satisfaction*; *Informal Payments for early Surgery/Admission*; *Survival Rate / Patients' Health Status & Quality of Life*; *Nosocomial Infections Rate*, whereas *intermediate end-results* include: *Costs*; *Errors*; *Hospital Spending*; *Investments*; *Complications*.

In the case hospital, we found that after that the official goal-setting took place, no further actions were taken to pursue those goals, as there was no consensus on the areas of improvement. Everyone somehow seemed to believe that his department is doing well, and the problem roots are in another department or, generally, in the understaffing. But even in those departments where managers moved on to implement some interventions, such interventions typically concentrated only on the performance of the front-line operations of the hospital, such as on nurses, doctors and patients' office employees who were in direct contact to patients. However, those people are people who work in the last segment of a much longer service distribution structure: the "value chain" of the public hospital services. Such approaches are common in the PM literature, and are found to increase the likelihood of introducing a narrow-sighted strategy, which can give rise to a sense of discontent and loss of enthusiasm of the employees of the front-line units (Bianchi, 2016, pp. 174-175) which, in our case, are doctors and nurses. This can be tackled by the case hospital managers by using the DPM *objective view* to map the final and intermediate services value chain provided to both external and internal users of the case hospital, and by focusing on the *macro-processes* of hospital performance which we found to be mainly three: *Adherence to Guidelines & Protocols*; *Proper Communication & Attendance to Patients' Needs*; and *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*. For each of those macro-processes and for each division, department or unit of the hospital, a different DPM *objective view* analysis could be prepared by the department managers. Although we did not go much into detail for each department and unit of the case hospital (as something like that would be out of the scope and purposes of the current study) we provided an example of such an analysis on a divisional level, of the procedure and steps that should be followed from division managers, department and unit managers in order for them to map the ultimate and intermediate services value chain of their division, department or unit.

Outputs refer to the direct, short-term, tangible and measurable results, while *outcomes* refer to some rather long-term results, effects and consequences which are usually non-measurable, not easily observable, but most important than outputs for the overall hospital performance. In our model, the outputs identified included: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; *Admitted Patients*; *Costs*; *Errors*; *Failure & Mortality Rates*; *Hospital Spending*; *Investments*; *Waiting List for Surgery or Admission*; *Waiting Time in ER & Outpatient Services*; and the outcomes included: *Complications*; *Incoming Patients, Informal Payments for early Surgery/Admission*; *Nosocomial Infections Rate*; *Patient Satisfaction*; *Survival Rate / Patients' Health Status & Quality of Life*.

The usage of an outcome-based approach of PM is recently highlighted to frame and determine the desirable results of the policies implemented so as to enable policymakers not just to recognize short-term but also long-term effects (Bianchi, 2016; Bianchi et al., 2017; Bianchi & Montemaggiore, 2008; Bianchi & Peters, 2016; Bivona et al., 2019; Borgonovi et al., 2018). In fact, outcome-based PM in the public sector -unlike traditional PM approaches - uses systems theory to grasp performance dynamics and their long-term effects on outcomes (Bianchi, 2015; Bianchi & Montemaggiore, 2008; Bianchi & Peters, 2016). In accordance to this research, we found that all the *End Results*, both *outputs* and *outcomes* of our case hospital, can only be influenced by *Performance Drivers* in the medium or long term. This means that there is a time delay between the moment that the hospital managers start manipulating a performance driver until the moment that a change in *End Results* will be documented. The "time" factor, thus, is rather important, but not easy to grasp by the static, *instrumental* DPM view. Thus, hospital managers need to operationalize the *instrumental view* from Static to Dynamic, and create the *dynamic, resource-based view* of hospital performance. Using the DPM *dynamic view*, we showed how the *End Results, Strategic Resources* and *Performance Drivers* are interrelated in the *Conceptual* and the *Policy Models of Hospital Performance* (available in Figures 33 and 34 respectively), in order for hospital managers to have a more holistic view of the system of hospital performance.

Both *End Results* and *Performance Drivers* are required for the DPM implementation, as they provide hospital managers and healthcare decision-makers with signs of potential future shift in *End Results*. This helps the them interpret and calculate the consequences of an incident or the implications of a policy, because they can easily observe possible discrepancies on performance in advance, and thus they have the chance to act upon it early in time. Thus, performance measures could be helpful to foresee possible changes in the financial or clinical *End Results* of the hospital. For example, when framed in a wider sense than budgetary control, the performance drivers of transaction costs can provide policy makers with valuable information for strategic planning, such as the opportunity to identify trade-offs in time (e.g., higher costs for Investments and managerial capacity utilisation costs in the short-term versus Investments in equipment, ICT, facilities that would increase performance in the long run).

Finally, the DPM *subjective view* provided the managers of our case hospital with a synthesis of the *instrumental* and the *objective view*. This view requires that performance measures (i.e., the drivers and end-results associated with the delivery of hospital services) are made explicit, and are then linked to the goals and objectives of the case hospital, which we identified in chapter 6.2.1 through our documents analysis. More specifically, in chapter 6.2.1 we identified four goals which we consider a bit more specific and - although they also did not entail any time horizon or any performance target - could be considered as a good start for the DPM analysis in the case hospital. Using the DPM *subjective view* we made sure that those goals were re-written as a function of the pursued results, including both the activities to undertake and the related objectives and performance targets to include in plans and budgets for each decision area. To this end, we combined our findings from the documents' analysis presented in chapter 6.2 with the description of those goals as set by the division managers (available in Appendixes 16 and 17) and we informed them with the findings from our DPM *instrumental* and *objective* analysis so far, which allowed us identify the activities and the resources that are needed for the achievement of each of

those four goals. In that respect, we found that – apart from the "tangible" strategic resources identified by the managers of the case hospital as essential in the achievement of each of those four goals, *Management Capacity* was equally necessary. *Management Capacity* is an intermediate product built over time by the public workers. According to our analysis, the performance driver of *Management Capacity* is the actual time that division managers and department managers have available during their shift to devote to this goal. This is because, in our model, *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping* is a function of the variable *Management Capacity*.

Our research and findings are in line with an increasing stream of research highlighting the need for a DPM approach to overcome common barriers and improve performance in the public sector (Bianchi, 2010, 2012, 2015, 2016; Bianchi et al., 1998, 2013; Bivona, 2013; Bivona & Montemaggiore, 2010; Cosenz & Noto, 2016). In accordance to that research, our study shows that assuming that enhancement of *Patient Satisfaction* could only be the product of the attempts rendered by the front-line level units and employees (i.e., front-office administrative personnel, nurses and doctors) may be deceptive. In our view, those entities are 'clients' of other departments and units operating at higher levels of authority, as supported by Bianchi (2016, pp. 174-175). Our research is in line with his findings, in that the data gathered from questionnaires in our case hospital provided just a limited contribution to hospital managers in respect to the development of sustainable patient satisfaction initiatives. Planning of such initiatives should consider in the first place: (1) the process of healthcare services provision and the exact points where to intervene in this process; (2) the framework for the allocation of tasks, responsibilities and expertise that is affecting the process of public hospital services production; and (3) who should be liable for the successful implementation of the intervention and the achievement of sustainable outcomes, explicitly and implicitly, related to the healthcare services provided.

11.5 Research Contributions

In this section we summarise our key findings and we outline the research contributions of our study and their practical implications for policy design in Greek public hospitals. The overall aim of this PhD research study was to contribute to the understanding of the performance of healthcare organisations by showing how to empirically conceptualise a comprehensive, context-specific model of hospital performance as perceived by hospital stakeholders, and by using this model to explain the counterintuitive, negative outcomes of performance management policies on hospital performance in order to help policymakers design better, quality-oriented performance management policies and reforms. Following a systemic approach, the selected case study - which is a real hospital in the Greek Healthcare system - allowed us to investigate the causing mechanisms of the negative consequences of the Greek healthcare reform on the performance of the case hospital. In doing so, we framed our analysis using the *Dynamic Performance Management* methodology.

Two different versions of a CLD Model of hospital performance (i.e., the *Conceptual* and the *Policy Model of Hospital Performance*, available in Appendixes 21 and 22 respectively) were the main outputs of the GMB sessions conducted with hospital stakeholders as participants, and formed the basis of our analysis and research

findings. The *Conceptual Model of Hospital Performance* is a CLD model that depicts the actual structure of the system of hospital performance and was used to explain the current low levels of hospital performance and the seven unintended outcomes documented at the case hospital. The *Policy Model of Hospital Performance* is an extended version of the former model which incorporates the policy structure, i.e., the policy interventions which are necessary, according to our participant stakeholders, in order for the hospital performance to improve.

Subsequently, this theory-oriented research project contributed to the broader field of performance management in the public sector by addressing the gap in knowledge regarding the possible causing mechanisms of the negative, counterintuitive outcomes of traditional performance management policies on hospital performance, and it did that by shedding light on how the hospital performance is perceived by hospital stakeholders and what mechanisms drive its dynamic behaviour (i.e., its trend over time).

Furthermore, our study had a dual external objective with two main components: a scientific/theoretical contribution and a practical implication. First, this research made a theoretical contribution to the public governance academic discussion, and in particular to the literature around Performance Management in the Public Health Sector, by building a comprehensive *Conceptual* and *Policy Model of Hospital Performance* that encompasses feedback mechanisms related to hospital performance and by using this model to explain the dynamic impact of performance management policies in Greece on the actual hospital performance. More specifically, out of all the unintended negative outcomes of the reform documented in our literature review, we found the seven following negative outcomes to be present at the case hospital, according to the participant stakeholders of our GMB sessions: Health Workers' and Patients' perceptions of Low Service Quality and Safety; Low Patient Satisfaction; Informal Payments; High Mortality Rates; Numerous Medical Errors; High Nosocomial & Multidrug-Resistant Bacteria Infections Rates; Low adherence to Clinical Guidelines and Treatment Protocols. Then, based on the model, we came up with seven *Dynamic Hypotheses* to explain those negative effects. Those *Dynamic Hypotheses* are the explanations that our research offers to the international literature in order to explain why those seven counterintuitive outcomes occurred at the case hospital and, possibly, in other hospitals in Greece. We call them *Dynamic Hypotheses* instead of "explanations" because in order to sufficiently test and prove them, a quantified SD model (a stock-flow diagram) would be needed, as that would enable us to run simulations and test our hypothesis in different scenarios to analyse the loop dominance. Such a model is not included in the present study, but is recommended for future research. Thus, our study will hopefully open the way for researchers worldwide to use this approach in order to assess hospital performance management policies from an outcome-based perspective.

The *Conceptual* and the *Policy Models of Hospital Performance* provided us with a number of other insights that are helpful for stakeholders and decision-makers. For example, we showed that *Availability of Equipment, ICT, Standard Procedures & Digital Forms* are the key to increased *Actual Time Available* for hospital managers, which allows them build *Management Capacity* in the long term. *Management Capacity* is, according to our participants, the level of management competencies, management support systems and working environment / procedural improvements that the supervisors and managers of departments (i.e., the administrative managers and the nurses and doctors who are supervisors or managers of their department or unit) have built or

achieved. Our research showed that *Management Capacity* is probably the most important *intermediate result* of the hospital function, and is usually neglected by hospital managers and policy makers in Greece who usually focus their reform policies on hospital outputs (i.e., the short-term results for patients).

Among the major insights of the *Policy Model of Hospital Performance* is that building *Management Capacity* was also the key to *Investments* planning and implementation, as well as to the *Standardisation & Surveillance of Procedures*, the *Digitalisation of Forms & Electronic Record Keeping*, which in turn contributes to increased *Adherence to Guidelines & Protocols* and to increased Clinical Efficiency and hospital outcomes (i.e., the long-term results for patients). *Management Capacity* also refers to the competencies of the department managers to quickly identify and specify needs and then absorb funds accordingly, in order to proceed to the *Investments* making. This is because the procedures of supplies management in public hospitals involve a lot of bureaucracy, and require specific knowledge and many work-hours from management personnel for the specification of the technical requirements of the investment, which is also subject to legal and other administrative restrictions. Increased *Management Capacity* built by the permanent employees of the hospital would also eliminate the need for extra personnel (i.e., personnel hired under fixed-term contracts of employment to help with the management responsibilities of the hospital managers that are not fulfilled) who is paid from the *Approved Budget*, creating one of the biggest sources of cost for the hospital which, in turn, hinders *Investments* because of the budget restrictions.

Furthermore, our research showed that an Internal Regulation would not only be serving as a tool to increase adherence, but would also serve as a "protective shield" for the nurses or doctors of the department, by prohibiting the *Nurse-Patient Ratio* and the *Doctor-Patient Ratio* by going above a maximum. As department managers cannot affect neither the number of doctors and nurses hired (because they are hired by the state, in certain times, irrespectively of the urgent needs of each hospital) nor the number of patients admitted to the hospital, the only weapon they could have to prevent those ratios from going higher than they should is the creation of such a regulation. In this way, department managers would be able to control how many patients are being admitted to their department according to the current number of nurses and doctors. However, our research study showed that most department managers in public hospitals are not capable (as that would need solid, up-to-date knowledge and understanding of the national and international guidelines and protocols, as well as continuous education and training) or not willing (as it would create much more responsibilities and time-consuming, administrative work for themselves in an everyday basis and would need personal sacrifices and dedication) of creating such a regulation. Thus, in many cases an internal regulation is perceived as a threat rather than as a weapon by the hospital managers.

The present study also made a practical contribution for policy-makers of the public healthcare sector in Greece, by supplying them with the *Policy Model of Hospital Performance*, which could help them redesign the existing performance management policies. First of all, although understaffing is usually blamed for all inefficiencies by hospital workers and stakeholders, our model showed that the *Actual Time Available per Patient/Task* is what really matters – not the staff number per se – and this is influenced by many other factors internal to the system of hospital performance. Furthermore, in Greek public hospitals the current financing system

is completely separated from performance indicators and prohibits *Investments*, which is something that negatively affects clinical efficiency and many other indicators related to patients' and workers' health and safety. Moreover, our model showed that informal payments and corruption - a major inefficiency of the Greek National Health System - will not stop until other structural changes in the system cause the waiting lists for surgeries or admission to decrease. Finally, we showed that the current Information Systems and *ICT* infrastructures in Greek public hospitals are non-adequate; the medical equipment is in many cases old and scarce; and the lack of specific work distribution, standard procedures and duties are usually the case; all factors that make health workers' everyday work more time-consuming and decrease their *Actual Time Available* during the shift. Thus, higher diffusion of information systems and of standard clinical procedures, based on protocols and guidelines, should be given a priority when designing future policies.

The DPM framework provided a systemic perspective of the mechanisms that lead to enhanced performance in the public healthcare sector, and it enabled us to identify the critical success factors leading to better hospital performance. It revealed the drivers of performance and their effect on outputs and outcomes, and it showed us how those outputs interact with hospital resources, causing the overall performance of health services to increase or to deteriorate (value destruction or value creation). The DPM analysis can therefore help a proactive and learning-oriented performance management. This is especially important for public healthcare organisations such as public hospitals, as they function in dynamic, complex systems, where normative, static, non-systemic and incremental approaches to performance management solely provide an "illusion" of control, contributing to unsustainable growth and crisis.

The three DPM views (i.e., *instrumental, dynamic, subjective, objective*) outlined in our study have a complementary function. The *objective view* determines what the objectives of performance improvement should be; the *instrumental* view illustrates how to impact this objective; and the *subjective view* emphasizes who should be made accountable for carrying out actions aimed at developing and managing *Strategic Resources*, in order to impact *Performance Drivers* and achieve this objective, in order to address the demands of patients efficiently and effectively. In the planning phase, after the administrative products have been identified, the combination of the three views illustrated how it is important to go back and describe the underlying procedures and operations, and then develop the goals and objectives within each field of responsibility. These goals must be aligned with the outcomes and indicators that can be obtained by actions aimed at maintaining the strategic resource system. Both *Strategic Resources* and *End Results* can reflect when the hospital is able to fulfil the demands and efficiently handle the volumes of internal (i.e., investments, standardised procedures, available equipment, ICT and facilities) and of external clients (i.e., volumes of incoming and admitted patients and patient demands).

The identification of *Strategic Resources*, *Performance Drivers* and *intermediate End Results*, as well as the different *views* that our DPM analysis provided (i.e., *instrumental, dynamic, subjective, objective*) are equally important for policy design, as they provide hospital decision-makers with signs of potential future shift in *End Results* and allows them to react in advance. The DPM analysis that we conducted can help public hospital managers in Greece interpret and calculate the consequences of an incident or the implications of a policy; show possible discrepancies on performance; and try to mitigate it. For this reason, the performance measures we

identified could be helpful to foresee possible changes in the financial and clinical results of the case hospital, as well as of other public hospitals in Greece. When framed in a wider sense than budgetary control, *Performance Drivers* can provide policy makers and public hospital managers in Greece with valuable information for strategic planning, such as the opportunity to identify trade-offs in space and in time (e.g., higher costs for investments and for managerial capacity building in the short-run, versus investments in equipment, ICT, and facilities that would increase performance in the long run). Thus, the performance management policies adopted at the case hospital during the healthcare reform and their overall impact for Greek public hospitals' outputs and outcomes, can now be examined through a different "lenses" by the hospital managers; lenses that will allow them overcome the counterintuitive, negative outcomes documented, which are inherent to the system of hospital performance, and that will help them align the hospital's and the different division's and departments' goals and actions to achieve improved efficiency and effectiveness, along with better hospital service quality for patients.

CHAPTER 12 – LIMITATIONS OF THE STUDY & RECOMMENDATIONS FOR FUTURE RESEARCH

In chapter 12 a number of recommendations for future research are identified, along with a number of limitations. In addition to the limitations related to the research methodology and design, described in chapter 5.5, this chapter discusses the limitations stemming from the scope of the present research and the model boundary, the implementation of the DPM approach in the case hospital and the coronavirus situation that affected it.

12.1 Process Limitations due to the Coronavirus Emergency

The Coronavirus Emergency largely affected our research planning and procedures, comprising one of the biggest challenges and limitations that the researcher had to manage. The covid-19 crisis burst out during our research implementation and threatened to defile all our efforts; to get the GMB sessions cancelled; and delay our research implementation indefinitely. Luckily, the relationship which the researcher had already built with the participants and the gatekeeper, as well as the legal bounds that she invoked (i.e., all the authorisations were already in place) materialised and the GMB sessions were conducted as planned, despite the difficulties, just a few weeks before the coronavirus total lockdown in Greece. However, the fact that the researcher was coming from abroad, and the fact that a possible case of Covid-19 was identified in the hospital on the day of the second GMB session were facts that created a certain tension in the hospital and among the participants; caused disruptions during the second GMB session; and resulted to half of the participants leaving the GMB session soon after it began, which might has affected the quality of our results.

Moreover, the lockdown that followed and the measures undertaken by the Greek government later on prohibited further visits to the case-hospital or to other hospitals; inhibited the possibility to continue the snowball sampling; and forced us use convenient sampling in order to identify seven more participants for the disconfirmatory interviews. Even though those disconfirmatory interviews were conducted with seven stakeholders from seven different hospitals in Greece, still our results are difficult to say whether or not they can be generalised and whether they are applicable to other public hospitals in Greece and/or abroad. Future research would enable further validation of our findings through triangulation, e.g., by giving the data to other researchers to analyse them (Turner et al., 2014) and by repeating the GMB sessions with larger participant groups, ideally from different hospitals in Greece, and later on even from different countries, in order to refine our CLD model using disconfirmatory techniques (Andersen et al., 2012) and derive a universal, generalizable *Conceptual Model of Hospital Performance*.

Furthermore, the follow-up of the GMB participants became difficult, because of the coronavirus crisis, the hospital overload and the public fear and uncertainty that this unusual situation evoked. Due to the corona crisis, the third GMB session that would be organised later on to discuss the results of the project with hospital executives and policy-makers, and would focus on the implementation of the DPM framework created by the researcher, was not materialised. This is something that prohibited our model from being implemented at the case hospital.

Minyard et al. (2018) identified seven preconditions for successful implementation of SD projects in Healthcare: clearly identified problem for model use; clearly defined geography for the model; influence of members; sponsorship; championing the process; managing the data; and continued model use. In our research project, only some of them are present, and more specifically the: clearly identified problem for model use; clearly defined geography for the model; and influence of members. In order to have greater chances of making an impact and be implemented at a national level, this research should be sponsored by the Ministry of Health and be repeated with executives of the ministry, to ensure Sponsorship, Championing the process, Managing the data and Continued model use.

Finally, following Scott et al.'s (2015) suggestion of moving from single cases to multiple cases in GMB projects, future empirical studies could adapt our research design and use a comparative, multiple-case-study approach to explore hospital performance mechanisms and dynamics. Focusing on many different hospital cases, and conducting GMB sessions in different European countries, would enable comparative research into the systemic view of hospital performance as perceived by stakeholders in Europe. By including hospital stakeholders from different countries and by conducting GMB sessions in different hospitals and settings, this research would lead to a more validated, universal and context-free representation of hospital performance through disconfirmation (Andersen et al., 2012).

12.2 Limitations arising from the System Boundary and Research Scope

Firstly, the fact that in chapter 8.1 we simplified the original *Conceptual Model of Hospital Performance*, although necessary for the analysis as we thoroughly explained in chapter 8.1, constitutes a limitation. A number of other limitations arise from the system boundary we adopted and, thus, from the elements that we left outside of our scope of the research. Such elements are related to potential model variables and model links that were mentioned by the participants during the GMB sessions but were not included in the final model; thus, they were left out of the scope of this research. Hereunder we present the most important ones.

1. *Actual Time Available per Patient/Task*: GMB participants also mentioned that during their shift, nurses often need to cover tasks of other health workers who are lacking because of the general understaffing (e.g., assistants, secretaries, messenger bearers, etc), which limits their *Actual Time Available per Patient* even further. Furthermore, most participants agreed that insufficient *Actual Time Available per Patient* leads to the increase of *Unplanned Readmissions Rate*. However, we did not include *Unplanned Readmissions Rate* as a variable in our final model because, as we discuss beneath, in paragraph 6 (regarding *Complications*) of this section.

2. *Adherence to Guidelines & Protocols*: Our GMB participants agreed that *Adherence to Guidelines & Protocols* also depends on the previous education as well as the ongoing education that nurses and doctors take. Lack of education and training could mean lack of knowledge and/or capacity to implementat protocols/guidelines and lack of awareness of the importance and the risks associated with the non-adherence to them. Although education is not included in our model as a separate variable, it is implied that *Difficulty of Shift Schedule* means less opportunities for education of the medical and nursing staff. The more difficult their shift schedule is, the less

rest they get, the more tired they feel and the more negatively their well-being and personal life is affected. This results in limited motivation for effective work, as well as in limited time and willingness to get more education and training.

Furthermore, according to the GMB participants, *Adherence to Guidelines & Protocols* is subject to personality factors (i.e., responsibility, sense of duty, carelessness), personal factors (i.e., physical and mental health, well-being, burn-out, personal and social life) and organisational factors (i.e., work satisfaction, salary, good relationships with colleagues, workplace conflicts and the hospital's system of incentives, such as bonuses, rewards or punishments associated with compliance to guidelines, which in most public hospitals in Greece is completely absent). If compliance to guidelines could affect the health workers' evaluation and potential promotion, it might would motivate them to comply. All those elements were part of the *Scoping Model of Hospital Performance*, but were finally excluded from the *Conceptual* and the *Policy Model of Hospital Performance* because they complicated the model and made it impossible to analyse. Although they are quite important, we decided to exclude them as those variables refer to internal processes of staffing and staff management; a subsystem which could be analysed separately, and then be added in the performance model as a separate branch.

3. *Approved Budget*: Some of the participants mentioned that in small, rural hospitals with low occupancies there might be a link between *Bed Occupancy* and *Approved Budget*, as hospital managers or department managers manipulate *Bed Occupancy* (by intentionally keeping patients more than needed in the hospital, in order to boost up the average *Length of Stay* and subsequently the *Bed Occupancy*) in order to base an argument for predicting even higher *Bed Occupancy* for the next year and negote with the Ministry a slightly higher – or at least, a not lower – budget. However, as this might not always be the case in smaller hospitals, and it is certainly not the case in bigger hospitals of the central cities and towns of Greece, we left this element outside our model and scope of research.

4. *Length of Stay*: Participants mentioned that the average *Length of Stay* and, subsequently, the *Bed Occupancy* in pathologic and acute care clinics increases because of older patients who get admitted and stay for long periods in the hospitals, as a result of lack of primary care centres and other community services for the elderly.

5. *Failure & Mortality Rates*: Failure and Mortality Rates largely depend on the patient's condition per se; how serious or fatal it is and how rare it is. Furthermore, in a cancer clinic or in a cancer hospital, the mortality rates are expected to be much higher than in other clinics or other kinds of hospitals. However, this does not affect the dynamics that we are trying to capture (i.e., the mortality rates of the clinic or of the hospital compared to other similar clinics or hospitals), and thus this element was left outside of our model.

6. *Complications*: Some of the participants mentioned that *Complications* decrease as the *Proper Communication & Attendance to Patients' Needs* increases, because by spending more time with patients, answering their questions and giving them information and instructions regarding their condition, treatment and personal care, the more usual patients' *Errors* which create *Complications* or unexpected readmissions would be avoided. Furthermore, a higher *Unplanned Readmissions Rate* would, in turn, lead to an increase of *Incoming*

Patients, because patients who were already admitted and discharged are coming back as new *Incoming Patients*, boosting the *Incoming Patients* rate higher than it would be otherwise. Although the *Unplanned Readmissions Rate* might indeed be affected by many of the elements of the hospital quality system and thus by many of the variables of our model, we left this variable outside of our scope of research because we did not have enough information from the GMB sessions to properly analyse all the causal links associated with *Unplanned Readmissions Rate* to include it.

7. *Costs*: Our model implicitly recognises as cost-bearing only those expenses which involve the use of a real resource and which are directly translated into spending and are paid by the hospital's annual budget. However, in reality there are many other sources of *Costs* in the production of hospital services that are not directly translated into spending (e.g., the cost of the usage of personnel work hours; the depreciation of the equipment, etc) or that are "hidden", in the sense that they do not involve the usage of a physical resource (i.e., the opportunity cost of bed-days).

8. *Proper Communication & Attendance to Patients' Needs*: Our GMB participants seem to distinguish between *Proper Communication & Attendance to Patients' Needs* on the one hand and *Proper Behaviour* (i.e., kindness, friendly attitude, good mood) towards patients on the other hand as two different things that might not always go together. However, we left this distinction out of our scope of research.

9. *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*: Participants agreed that apart from *the Actual Time Available per Patient/Task*, managers' education, personal initiative and dedication largely defines the level of the staff's commitment to the organisational change and to initiatives regarding the *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*.

10. *Waiting Time in ER & Outpatient Services*: Participants agreed that much of the delay in the ER could be avoided if there were adequate *ICT* systems in place; if the paramedics personnel was adequate, so that patients would be transferred back and forth to the emergency room without delay; if there was more support staff available at the ER, handling patients, children and relatives of the patients and other problems that arise, so that nurses would not lose time on those issues; if triage was implemented correctly; if the ER had spatial autonomy and the spatial distribution and structure of the ER examination rooms was different, so as to accommodate more efficient handling of patients.

11. *Doctors' and Nurses' Skills & Experience*: Our participants recognised three main sources of doctors' and nurses' professional quality: (1) character/personality, (2) education and (3) experience; all of which co-define their skills. We left the personal factors and the education outside of our scope of research, thus in our model the doctors' and the nurses' skills depend only on their experience, i.e., the total number of patients they have treated in their life.

Furthermore, by mentioning "scientific quality" and "strictly medical" skills, our participants made a clear distinction here between the scientific competence, on the one hand, and the social competence and charisma, on the other hand, of the doctor or the nurse, which also affects the overall quality of the services that doctors and nurses provide. For example, the reputation of the hospital doctors -which is spread through word of mouth and

attracts more *Incoming Patients* at the hospital – is, according to our participants, a product of both their medical skills and their communication charisma. However, this charisma is again a personal factor and is not included in our scope of research and in our model.

12.3 Recommendations for Future Research

Our research study led to the development of a qualitative, CLD model. The CLD shows a fair mix between loops that reinforce performance (either in a positive or negative direction) and loops that balance (control) it. However, not all links and loops in the model are of the same significance for the real system. Thus, the dynamic behaviour of the model depends not only on the structure per se, but also on the significance of each building block of this structure, i.e., the relative significance of each loop. Since a CLD is a purely qualitative tool, it does not indicate the strength of each loop, nor can it be used for inferring dynamic behaviour (i.e., the trend of hospital performance). Further research is needed to understand the relative significance of all links and loops, in order to be able to predict the dynamic behaviour (trend) of the system.

Understanding and analysing the mechanisms of the hospital performance system, based on the *Simplified Conceptual Model of Hospital Performance,* enabled us to create a set of hypotheses which can explain all of the seven negative outcomes of the healthcare reform presented in chapter 6, which our literature review highlighted and our research revealed that are present at the case hospital. In order to test those hypotheses, however, a quantified SD model (a stock-flow diagram) would be needed, as that would enable us to run simulations and test our hypothesis in different scenarios to analyse the loop dominance. Future research could enable the validation of our findings by transforming our CLD model into a Stock-and-Flow Diagram (i.e., a quantitative SD model that allows simulation) for verification of the dynamic hypotheses that our study identified through simulation. In order for this to happen, future research should first of all focus on conducting more interviews and/or GMB sessions with hospital stakeholders for the validation and simplification of our CLD model through disconfirmation, so that it becomes small enough to be quantifiable and transformable into a Stock and Flow model. After that, research could focus on the quantitative data that should be drawn from the literature to be used for the model indicators and initial values of the model variables.

Furthermore, our model is context-specific and focused on the Greek public sector, as our primary data were drawn from a Greek public hospital. Involving hospital stakeholders from different countries and/or from different sectors (i.e., private sector and public sector hospitals) would allow future researchers identify the part of the model that is universal for hospital performance, and the part of it that is applicable only in the public sector ones. Such a model could then be compared to other models and inform the international literature around hospital performance.

Moreover, our study focused on the documented negative consequences of the Greek Healthcare reform, that followed the financial crisis of 2008. Future studies could follow the same research design and focus on the documented negative outcomes and inefficiencies related to other major social incidents, such as the recent coronavirus crisis.

Finally, our CLD model was developed by different kinds of participant stakeholders (i.e., doctors, nurses, managers, other health workers and patients), thus it incorporates different views and it is designed to facilitate different kinds of analyses for different purposes and stakeholders. It would be interesting for further researchers to focus on one specific area and use the model to analyse e.g., only nurse-related dynamics, or doctor-related dynamics, or patient-related dynamics. Such concentration on one profession within the hospital, or on one research area (e.g., on one of the model themes that we identified in chapter 11.2.2) would further validate our results and would enable for some of the elements and findings that we left outside of our model boundary in this study to be endorsed and further researched. Such research attempts would also lead to smaller, more accurate and validated CLD models that could more easily be quantified and transformed into Stock-and-Flow Diagrams for simulation. Adopting such a research focus, and using the DPM approach for the analysis of those models, would also enable future researchers identify the *Performance Drivers* of those specific areas or professions.

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Appendix 1: Call for Participants - PowerPoint Presentation

Research Background

Does Performance Measurement serve its underlying purpose of improving quality of care for patients?

Research Stream 1:

Performance Measurement leads to improved quality of healthcare services (De Vos et al., 2009; Donabedian,1988; Mainz, 2003; Scanlon et al., 2001; Smith, Mossialos, Leatherman, & Papanicolas, 2009)

Research Stream 2:

Performance Measurement does not affect quality (De Vos, et al., 2009; Nolan & Berwick, 2006; Werner & Bradlow, 2006; Werner et al., 2008a, 2008b; Wright & Hershman, 2014)

Research Stream 3:

Performance Measurement can lead to harmful outcomes on quality

(Bianchi, 2010, 2012, 2015; Bivona & Montemaggiore, 2010; De Gooyert, Honingh & Van Genugten, 2019)

Performance Paradox / System Archetypes → shifting the focus on unimportant elements at the cost of neglecting the important ones; motivating people to manipulate resources in order to achieve intended results in the short-term, whereas creating catastrophic consequences in the long-term, etc (Forrester, 1958; Senge, 1990; Van Thiel & Leeuw, 2002;)

Research Purpose

The purpose of this case-study is **to assess the long-term dynamic outcome of performance measurement system on the quality** of healthcare services produced.

Research Question

How is hospital quality empirically established and what mechanisms drive its dynamic behaviour, as perceived by participant stakeholders? (Explanatory)

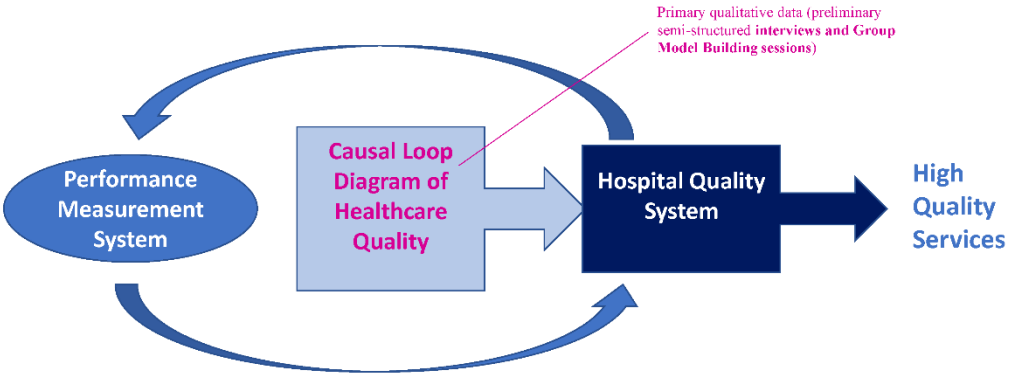
RESEARCH QUESTION	RESEARCH STRATEGY	DATA COLLECTION	DATA ANALYSIS	RESULTS
1	-Inductive approach -Divergent Phase/ Qualitative System Dynamics Modelling	-Literature -Documents	-Critical Review -Narrative analysis	-Preliminary Model of Hospital Quality -Interview Guide
		-Interviews		-Concept Model of Hospital Quality
	-Initial Scoping & Consensus Building (Problem Definition, Model Conceptualisation)	-Group Model Building sessions	-Building Causal Loop Diagram of Hospital Quality, starting from a Concept Model -VENSIM software will be used to facilitate modelling during the GMB sessions	-Scoping Model of Hospital Quality (Divergent CLD version)

Methods (1)

Hospital Quality: perceived differently by different stakeholders

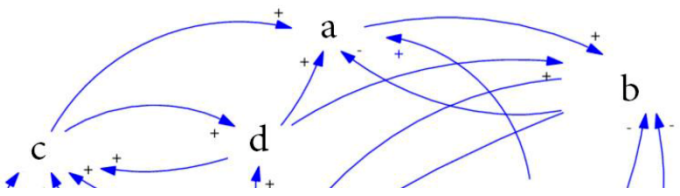
Systemic view (Meadows, 2008; Sterman, 1994) → **Group Model Building** (De Gooyert, 2016, 2018; De Gooyert et al., 2019; Richardson & Andersen, 1995; Vennix, 1996;)

→ **System Dynamics Modelling** (Forrester, 1961; Richardson & Pugh, 1981; Sterman, 1989, 2000)



Expected Results

Not only theoretical contribution on the mechanisms that lead to quality, but also **consulting, insight and practical suggestions to the participating organisations on the actual, real-life issues /problems they face.**



Data Collection

2 quality experts/workers of public hospitals or health-related organisations will be interviewed

5-7 participants (quality experts, hospital managers, doctors, nurses, health workers, patients) for each Group Model Building session.

Are there any issues/problems in your organisation relevant to performance measurement and/or health services quality?

We can individualise the research method to your specific case and work on your actual issues/problems as part of our research (case-study).

Interested to participate ?

Questions
Comments
Suggestions

For more information, please contact:

Angeliki Lenakaki, PhD(c)
International PhD in Model Based Public Planning, Policy Design and Management

Institute for Management Research, Radboud University Nijmegen, The Netherlands
Department of International Studies and Political Science, University of Palermo, Italy

Email: angeliki.lenakaki@community.unipa.it, angeliki.lenakaki@student.ru.nl

Appendix 2: Formal Request for Access in the Case Hospital – Email Body

Gmail

ANGELIKI LENAKAKI <angela.lenakaki@gmail.com>

Αιτηση για διεξαγωγη ερευνας στο ΛΑΙΚΟ νοσοκομειο

ANGELIKI LENAKAKI <angela.lenakaki@gmail.com> 30 Νοεμβρίου 2019 - 10:46 μ.μ.
Προς: dioikisi@laiko.gr

Καλημέρα,

Ονομάζομαι Αγγελική Λενακάκη και είμαι διδακτορική ερευνήτρια στο Πανεπιστήμιο του Παλέρμου. Το θέμα της διδακτορικής μου διατριβής είναι η ποιότητα των υπηρεσιών υγείας, και θα ήθελα να πραγματοποιήσω μέρος της έρευνας στο Νοσοκομείο σας.

Σας αποστέλλω συνημμένα αίτηση για διεξαγωγη ερευνας στο ΛΑΙΚΟ νοσοκομειο ως μέρος της διδακτορικής μου διατριβής, και αναλυτικά στοιχεία με τους σκοπούς της έρευνας και της συλλογής δεδομένων.

Για οποιαδήποτε άλλη πληροφορία χρειαστείτε, βρίσκομαι στη διάθεσή σας. Σας ευχαριστώ εκ των προτέρων.

Ειλικρινά,

Αγγελική Λενακάκη

Angelıkı Lenakaki

PhD Candidate
System Dynamics Group
Dept of International Studies and Political Science (DEMS), University of Palermo

International PhD in Model Based Public Planning, Policy Design and Management
University of Palermo (Italy), University of Bergen (Norway), Radboud University of Njimegen (Netherlands)

Email: angeliki.lenakaki@community.unipa.it, angela.lenakaki@gmail.com
Tel: +39 389 7850167

2 συνημμένα αρχεία

aitisi-entypo.pdf
326K

Research proposal.pdf
70K

Appendix 3: Formal Request for Access in the Case Hospital – Signed Request for Authorization

Α Ι Τ Η Σ Η

ΑΠΟ

ΕΠΩΝΥΜΟ: ΛΕΝΑΚΑΚΗ

ΟΝΟΜΑ: ΑΓΓΕΛΙΚΗ

ΟΝΟΜΑ ΠΑΤΡΟΣ: ΑΝΤΩΝΙΟΣ

ΟΝΟΜΑ ΜΗΤΡΟΣ: ΕΛΕΝΗ

Α.Δ.Τ.: ΑΚ231064

ΗΜΕΡ.ΓΕΝΝΗΣΗΣ: 05/03/1989

ΤΟΠΟΣ ΓΕΝΝΗΣΗΣ: ΑΘΗΝΑ

Δ/ΝΣΗ ΚΑΤΟΙΚΙΑΣ:. ΠΑΛΑΙΟΚΑΠΑ 46

71305 ΗΡΑΚΛΕΙΟ ΚΡΗΤΗΣ

ΤΗΛΕΦΩΝΟ/Α: 00393897850167

EMAIL : antzela.lenakaki@gmail.com

ΠΡΟΣ
ΛΑΙΚΟ ΝΟΣΟΚΟΜΕΙΟ
ΥΠ'ΟΨΙΝ: ΔΙΟΙΚΗΤΗ ΝΟΣΟΚΟΜΕΙΟΥ

ΗΡΑΚΛΕΙΟ ΚΡΗΤΗΣ, 02/12/2019

Παρακαλώ όπως μου χορηγηθεί άδεια για διεξαγωγή ποιοτικής έρευνας στο Νοσοκομείο σας με θέμα την ποιότητα των υπηρεσιών υγείας, ως μέρος της διδακτορικής μου διατριβής στο Πανεπιστήμιο του Παλέρμου.

Η έρευνα θα περιλαμβάνει 20 συμμετέχοντες συνολικά (εργαζομένους του Νοσοκομείου σας, σχετικούς με θέματα ποιότητας) και θα διενεργηθεί με 4 ημι-δομημένες συνεντεύξεις διάρκειας μίας ώρας η κάθε μία και 4 ομαδικές συναντήσεις διάρκειας τριών ωρών η κάθε μία. Ο σκοπός είναι να χρησιμοποιηθεί η γνώση και οι απόψεις των εργαζομένων συνολικά ώστε να χτιστεί ΄ένα μοντέλο ποιότητας νοσοκομειακών υπηρεσιών και των μηχανισμών που περιλαμβάνει.

Συνημμένα σας επισυνάπτω αναλυτικά στοιχεία για το σκοπό της έρευνας, της διδακτορικής μου διατριβής καθώς επίσης και για τις μεθόδους που θα χρησιμοποιηθούν κατά τη συλλογή των δεδομένων.

Appendix 4: Formal Request for Access in the Case Hospital – Signed Declaration of Research Ethics

ΥΠΕΥΘΥΝΗ ΔΗΛΩΣΗ

(άρθρο 8 Ν.1599/1986)

Η ακρίβεια των στοιχείων που υποβάλλονται με αυτή τη δήλωση μπορεί να ελεγχθεί με βάση το αρχείο άλλων υπηρεσιών (άρθρο 8 παρ. 4 Ν. 1599/1986)

ΠΡΟΣ(1):	ΛΑΪΚΟ ΝΟΣΟΚΟΜΕΙΟ							
Ο – Η Όνομα:	ΑΓΓΕΛΙΚΗ		Επώνυμο:	ΛΕΝΑΚΑΚΗ				
Όνομα και Επώνυμο Πατέρα:	ΑΝΤΩΝΙΟΣ ΛΕΝΑΚΑΚΗΣ							
Όνομα και Επώνυμο Μητέρας:	ΕΛΕΝΗ ΣΦΑΚΙΑΝΑΚΗ							
Ημερομηνία γέννησης(2):	05/03/1989							
Τόπος Γέννησης:	ΑΘΗΝΑ							
Αριθμός Δελτίου Ταυτότητας:	ΑΚ 231084		Τηλ:	2810311884				
Τόπος Κατοικίας:	ΗΡΑΚΛΕΙΟ ΚΡΗΤΗΣ	Οδός:	ΠΑΛΑΙΟΚΑΠΑ		Αριθ:	48	ΤΚ:	71306
Αρ. Τηλεομοιοτύπου (Fax):			Δ/νση Ηλεκτρ. Ταχυδρομείου (Email):	angela.lenakaki@gmail.com				

Με ατομική μου ευθύνη και γνωρίζοντας τις κυρώσεις (3), που προβλέπονται από τις διατάξεις της παρ. 6 του άρθρου 22 του Ν. 1599/1986, δηλώνω ότι:

Στο πλαίσιο της έρευνας που επιθυμώ να πραγματοποιήσω στο Νοσοκομείο σας για τη διδακτορική μου διατριβή α) θα ακολουθηθούν οι όροι περί προστασίας δεδομένων προσωπικού χαρακτήρα, και β) δεν θα επιβαρυνθεί οικονομικά το Νοσοκομείο από τη διενέργεια της έρευνας άμεσα ή έμμεσα, με κανένα τρόπο και σε καμία περίπτωση

(4)

Ημερομηνία: ...01 / 12 / 2020.....

Ο – Η Δηλ.

(Υπογραφή)

(1) Αναγράφεται από τον ενδιαφερόμενο πολίτη ή Αρχή ή η Υπηρεσία του δημόσιου τομέα, που απευθύνεται η αίτηση.
(2) Αναγράφεται ολογράφως.
(3) «Όποιος εν γνώσει του δηλώνει ψευδή γεγονότα ή αρνείται ή αποκρύπτει τα αληθινά με έγγραφη υπεύθυνη δήλωση του άρθρου 8 τιμωρείται με φυλάκιση τουλάχιστον τριών μηνών. Εάν ο υπαίτιος αυτών των πράξεων σκόπευε να προσπορίσει στον εαυτόν του ή σε άλλον περιουσιακό όφελος βλάπτοντας τρίτον ή σκόπευε να βλάψει άλλον, τιμωρείται με κάθειρξη μέχρι 10 ετών.
(4) Σε περίπτωση ανεπάρκειας χώρου η δήλωση συνεχίζεται στην πίσω όψη της και υπογράφεται από τον δηλούντα ή την δηλούσα.

Appendix 5: Formal Request for Access in the Case Hospital – Signed Research Protocol

Ερευνητικό Πρωτόκολλο

Ερευνήτρια / Υποψήφια Διδάκτωρ Πανεπιστημίου Παλέρμου: Αγγελική Λενάκακη

Επίσημος Τίτλος Διδακτορικού Προγράμματος: DINAMICA DEI SISTEMI (ΔΥΝΑΜΙΚΗ ΣΥΣΤΗΜΑΤΩΝ στα Ελληνικά / SYSTEM DYNAMICS στα Αγγλικά)

Το Διδακτορικό αυτό πρόγραμμα έχει ως στόχο την άριστη εκμάθηση και ορθή χρήση της ΔΥΝΑΜΙΚΗΣ ΣΥΣΤΗΜΑΤΩΝ (System Dynamics) και την εξειδίκευση στις συμμετοχικές μεθόδους ανάπτυξης των Δυναμικών μοντέλων (Group Model Building), και - σε αντίθεση με άλλα διδακτορικά προγράμματα που είναι εξ' αρχής ερευνητικά – το διδακτορικό πρόγραμμα αυτό περιλαμβάνει εντατικά μαθήματα κατα τα 2 πρώτα έτη για την εκμάθηση της μεθοδολογίας. Ως μέρος του διδακτορικού προγράμματος, κατα το 3^{ο} έτος φοίτησης όλοι οι υποψήφιοι διδάκτορες επιλέγουν ελεύθερα ένα τομέα/ χώρο εργασίας/ πλαίσιο (case study) στο οποίο θα εφαρμόσουν αυτές τις μεθόδους (Group Model Building, System Dynamics Modeling) και το οποίο θα χρησιμοποιήσουν ως βάση (case study) για τη συγγραφή της διδακτορικής τους διατριβής.

Η μεθοδολογία ΔΥΝΑΜΙΚΗΣ ΣΥΣΤΗΜΑΤΩΝ γεννήθηκε στο Πανεπιστήμιο MIT - Sloan Management School τη δεκαετία του 1950 και αναπτύχθηκε από τον καθηγητή Jay W. Forrester. Μεθοδολογία αυτή μας βοηθά να κατανοήσουμε, να σχεδιάσουμε και να διαχειριστούμε τις αλλαγές, και να πάρουμε αποφάσεις. Χρησιμοποιώντας τα δεδομένα και την τεχνολογία (ειδικά λογισμικά μοντελοποίησης), το System Dynamics διαμορφώνει τις σχέσεις μεταξύ όλων των τμημάτων ενός συστήματος και δείχνει πώς αυτές οι σχέσεις επηρεάζουν τη συμπεριφορά του συστήματος με την πάροδο του χρόνου.

Αν και το Πανεπιστήμιο MIT είναι ακόμη μέχρι και σήμερα το «επίκεντρο» θα λέγαμε των εξελίξεων της μεθόδου αυτής και της έρευνας με βάση τη μέθοδο, η ΔΥΝΑΜΙΚΗ ΣΥΣΤΗΜΑΤΩΝ διδάσκεται σήμερα σε όλο τον κόσμο και χρησιμοποιείται από εταιρείες, μη κερδοσκοπικούς οργανισμούς, σχολεία και κυβερνήσεις για να τους βοηθήσει να διαχειριστούν πολύπλοκες προκλήσεις σε ποικίλους τομείς, από την οργανωτική αλλαγή ως την κλιματική αλλαγή, και απο τη

φυσιολογία στη δημοσιονομική πολιτική. Περισσότερες πληροφορίες για τη μέθοδο αυτή μπορείτε να δείτε στην επίσημη σελίδα του Πανεπιστημίου MIT – Sloan (https://mitsloan.mit.edu/faculty/academic-groups/system-dynamics/about-us).

Επίσημος Τίτλος Διδακτορικής Διατριβής: Modelli per il miglioramento della performance nel settore pubblico (Μοντέλα για τη βελτίωση της απόδοσης στον δημόσιο τομέα στα Ελληνικά / Model-Based Public Planning, Policy Design and Management στα Αγγλικά)

Επιλεγμένος Τομέας έρευνας: Τομέας Υγείας

Ως μέρος του προγράμματος όλοι οι υποψήφιοι διδάκτορες επιλέγουν ένα τομέα στον οποίο θα εφαρμόσουν αυτές τις μεθόδους που έχουν διδαχθεί (Group Model Building, System Dynamics Modeling) και το οποίο θα χρησιμοποιήσουν ως βάση (case study) για τη συγγραφή της διδακτορικής τους διατριβής. Λόγω της επιθυμίας μου να συμβάλω επιστημονικά στον ευαίσθητο χώρο της Υγείας, διάλεξα αυτόν τον τομέα για την εφαρμογή των μεθόδων και την πραγματοποίηση της έρευνας (case-study) που θα χρησιμοποιήσω στη συνέχεια ως βάση για τη διδακτορική μου διατριβή.

Επιλεγμένο Θέμα έρευνας (έρευνα που θα λάβει χώρα στο Λαϊκό Νοσοκομείο, και που θα χρησιμοποιηθεί στη συνέχεια ως βάση για τη συγγραφή της διδακτορικής μου διατριβής):

Ξεπερνώντας τις παραδοσιακές μεθόδους μέτρησης απόδοσης στα δημόσια νοσοκομεία: Μια προσέγγιση Δυναμικής Συστημάτων για τη βελτίωση της ποιότητας των νοσοκομειακών υπηρεσιών

Σκοπός έρευνας (έρευνα που θα λάβει χώρα στο Λαϊκό Νοσοκομείο, και που θα χρησιμοποιηθεί στη συνέχεια ως βάση για τη συγγραφή της διδακτορικής μου διατριβής):

Σκοπός αυτής της ερευνητικής μελέτης είναι η ανάπτυξη ενός εννοιολογικού μοντέλου (διάγραμμα αιτιώδους βρόχου - Causal Loop Diagram) ποιότητας νοσοκομειακών υπηρεσιών απο τους ίδιους τους ενδιαφερόμενους φορείς (εργαζομένους του νοσοκομείου (ιατρούς, νοσηλευτές, διοικητικούς και άλλους υπαλλήλους, τεχνικούς,

υπευθύνων εξοπλισμού, καθαριότητας, κτλ). Η ομάδα εργαζομένων που θα διαμορφωθεί απο το νοσοκομείο σας θα συμμετέχει (χωρίς καμία οικονομική επιβάρυνση) σε ειδικά διαμορφωμένα σεμινάρια (Group Model Building Sessions) τα οποία θα διεξαχθούν απο την ερευνήτρια, κα Λενακακη Αγγελική στο χώρο του νοσοκομείου σας. Ο σκοπός είναι να χρησιμοποιηθεί η γνώση και οι απόψεις των εργαζομένων συνολικά ώστε να χτιστεί ένα μοντέλο ποιότητας νοσοκομειακών υπηρεσιών και των μηχανισμών που περιλαμβάνει.

Πιο συγκεκριμένα, με τη βοήθεια της ερευνήτριας ως facilitator κατα τη διάρκεια των ειδικά διαμορφωμένων αυτών σεμιναρίων, η ομάδα εργαζομένων θα δημιουργήσει ένα μοντέλο ποιότητας υπηρεσιών υγείας (Causal Loop Diagram), που θα αντανακλά όλους τους παράγοντες που συμβάλλουν στην ποιότητα και τις συνδέσεις μεταξύ τους, όπως τις αντιλαμβάνονται οι ίδιοι οι συμμετέχοντες της ομάδας. Στη συνέχεια το μοντέλο αυτό θα χρησιμοποιηθεί απο την ομάδα για να εξηγήσει και να αξιολογήσει τις βραχυπρόθεσμες και μακροπρόθεσμες δυναμικές επιπτώσεις των μέτρων απόδοσης (performance indicators) του συστήματος μέτρησης του νοσοκομείου στην ποιότητα των παραγόμενων υπηρεσιών.

Μεθοδολογία έρευνας:

Θα χρησιμοποιηθούν μικτές μέθοδοι, συνδυάζοντας πρωτογενή ποιοτικά δεδομένα από τέσσερις προκαταρκτικές ημι-δομημένες συνεντεύξεις και τέσσερα σεμινάρια Group Model Building (GMB) με δευτερογενή, ποιοτικά και ποσοτικά δεδομένα από βιβλιογραφικές ανασκοπήσεις και από επίσημα έγγραφα ανοιχτής πρόσβασης.

Ποιοτικά δεδομένα αρχικά θα αντληθούν από τη βιβλιογραφία και τα ηλεκτρονικά έγγραφα και θα χρησιμοποιηθούν ως βάση για την κατασκευή του οδηγού συνέντευξης και για την κατάρτιση ενός προκαταρκτικού μοντέλου (δηλαδή ενός πολύ βασικού διαγράμματος αιτιώδους βρόχου -Causal Loop Diagram - της ποιότητας του νοσοκομείου) που θα χρησιμοποιηθεί κατά τις προκαταρκτικές συνεντεύξεις. Τα δεδομένα από τις συνεντεύξεις με τέσσερις εμπειρογνώμονες ποιότητας θα χρησιμοποιηθούν για να βελτιώσουν αυτό το προκαταρκτικό μοντέλο και να δημιουργηθεί το "concept model", δηλαδή το διάγραμμα αιτιώδους βρόχου της ποιότητας του νοσοκομείου που θα χρησιμοποιηθεί ως σημείο εκκίνησης των τεσσάρων

σεμιναρίων GMB. Όλα τα σεμινάρια GMB θα έχουν το ίδιο θέμα (ποιότητα υπηρεσιών υγείας) και θα ξεκινήσουν παρουσιάζοντας το ίδιο μοντέλο στους συμμετέχοντες, ενθαρρύνοντάς τους να το επεκτείνουν ή / και να το αλλάξουν.

Συμμετέχοντες

Η έρευνα στο Λαϊκό Νοσοκομείο θα περιλαμβάνει 20 συμμετέχοντες συνολικά (εργαζομένους του Νοσοκομείου σας, σχετικούς με θέματα ποιότητας, διαφόρων ειδικοτήτων) και θα διενεργηθεί με 4 ημι-δομημένες συνεντεύξεις (σε 4 εκ των 20 συμμετεχόντων) διάρκειας μίας ώρας η κάθε μία και 4 ομαδικές συναντήσεις (σεμινάρια GMB) διάρκειας τριών ωρών το κάθε ένα.

Οι 20 συμμετέχοντες θα χωριστούν σε 2 ομάδες των 10 ατόμων και κάθε ομάδα θα συμμετέχει σε 2 σεμινάρια GMB. Οι συνεντεύξεις θα προηγηθούν των σεμιναρίων, και θα διενεργηθούν μέσω σκαιπ. Τα σεμινάρια θα πραγματοποιηθούν σε 2 διαδοχικές ημέρες, ως εξής:

Ημέρα 1η: Σεμινάριο GMB - ομάδα 1 (3 ώρες, 10 άτομα)
Σεμινάριο GMB - ομάδα 2 (3 ώρες, 10 άτομα)
Ημέρα 2η: Σεμινάριο GMB - ομάδα 1 (3 ώρες, 10 άτομα)
Σεμινάριο GMB - ομάδα 2 (3 ώρες, 10 άτομα)

Χρονοδιάγραμμα:

1) **Συνεντεύξεις** (4 άτομα, 1 ώρα με κάθε άτομο ξεχωριστά)
   Διενέργεια μέσω skype, σε χρόνο που εξυπηρετεί τον κάθε συμμετέχοντα
   Μεταξύ 1- 10 Φεβρουαρίου 2020
2) **Σεμινάρια GMB**
   Προτεινόμενες ημερομηνίες: 20-21 ή 24-25 Φεβρουαρίου 2020

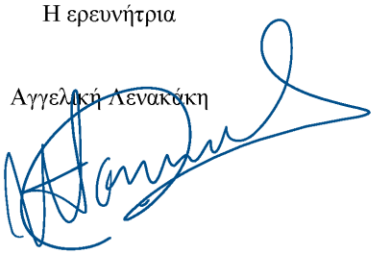
Αποτελέσματα & Χρήση αποτελεσμάτων

Ο σκοπός είναι να χρησιμοποιηθεί η γνώση και οι απόψεις των εργαζομένων συνολικά ώστε να χτιστεί ένα μοντέλο ποιότητας νοσοκομειακών υπηρεσιών και των μηχανισμών που περιλαμβάνει. Αυτό το μοντέλο είναι και το παραδοτέο της έρευνας, το τελικό αποτέλεσμα.

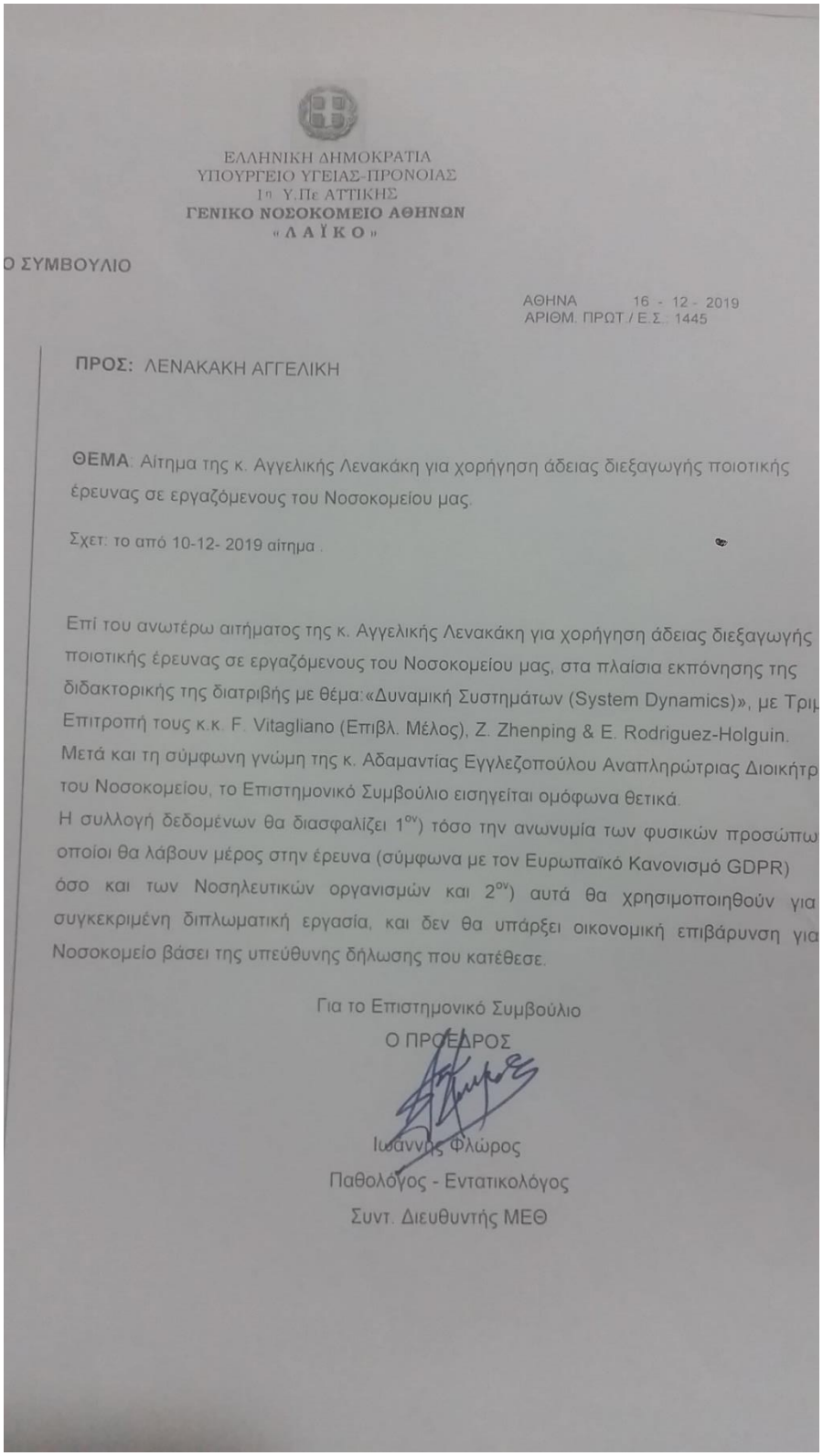
Στόχος της παρέμβασης αυτής είναι οι συμμετέχοντες να δημιουργήσουν νέα γνώση και κατανόηση μιας πληρέστερης εικόνας της ποιότητας υπηρεσιών υγείας και των μηχανισμών μέσω των οποίων αυτή δημιουργείται ή καταστρέφεται, και στρατηγικών αντιμετώπισης, ωστε να βοηθηθούν στην δουλειά τους. Στόχος επίσης της παρέμβασης είναι να παρασχεθούν στους φορείς λήψης αποφάσεων του νοσοκομείου νέες γνώσεις σχετικά με μεταβολές στα μέτρα απόδοσης (performance indicators) που χρησιμοποιεί το νοσοκομείο, που θα προωθούσαν μακροπρόθεσμα την ποιότητα των υπηρεσιών υγείας.

Η ερευνήτρια

Αγγελική Λενακάκη



Appendix 6: Formal Authorization of Conducting Research & Approval of Access in the Case Hospital



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ ΥΓΕΙΑΣ-ΠΡΟΝΟΙΑΣ
1η Υ.Πε ΑΤΤΙΚΗΣ
ΓΕΝΙΚΟ ΝΟΣΟΚΟΜΕΙΟ ΑΘΗΝΩΝ
«Λ Α Ϊ Κ Ο»

Ο ΣΥΜΒΟΥΛΙΟ

ΑΘΗΝΑ 16 - 12 - 2019
ΑΡΙΘΜ. ΠΡΩΤ. / Ε.Σ.: 1445

ΠΡΟΣ: ΛΕΝΑΚΑΚΗ ΑΓΓΕΛΙΚΗ

ΘΕΜΑ: Αίτημα της κ. Αγγελικής Λενακάκη για χορήγηση άδειας διεξαγωγής ποιοτικής έρευνας σε εργαζόμενους του Νοσοκομείου μας.

Σχετ: το από 10-12- 2019 αίτημα .

Επί του ανωτέρω αιτήματος της κ. Αγγελικής Λενακάκη για χορήγηση άδειας διεξαγωγής ποιοτικής έρευνας σε εργαζόμενους του Νοσοκομείου μας, στα πλαίσια εκπόνησης της διδακτορικής της διατριβής με θέμα:«Δυναμική Συστημάτων (System Dynamics)», με Τριμ Επιτροπή τους κ.κ. F. Vitagliano (Επιβλ. Μέλος), Z. Zhenping & E. Rodriguez-Holguin. Μετά και τη σύμφωνη γνώμη της κ. Αδαμαντίας Εγγλεζοπούλου Αναπληρώτριας Διοικήτρ του Νοσοκομείου, το Επιστημονικό Συμβούλιο εισηγείται ομόφωνα θετικά.
Η συλλογή δεδομένων θα διασφαλίζει 1ον) τόσο την ανωνυμία των φυσικών προσώπω οποίοι θα λάβουν μέρος στην έρευνα (σύμφωνα με τον Ευρωπαϊκό Κανονισμό GDPR) όσο και των Νοσηλευτικών οργανισμών και 2ον) αυτά θα χρησιμοποιηθούν για συγκεκριμένη διπλωματική εργασία, και δεν θα υπάρξει οικονομική επιβάρυνση για Νοσοκομείο βάσει της υπεύθυνης δήλωσης που κατέθεσε.

Για το Επιστημονικό Συμβούλιο
Ο ΠΡΟΕΔΡΟΣ

Ιωάννης Φλώρος
Παθολόγος - Εντατικολόγος
Συντ. Διευθυντής ΜΕΘ

Appendix 7: Email to Participants

Gmail

ANGELIKI LENAKAKI <angela.lenakaki@gmail.com>

ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΣ ΕΡΕΥΝΑΣ & ΕΡΓΑΣΤΗΡΙΩΝ ΣΧΕΤΙΚΑ ΜΕ ΤΗΝ ΤΗΝ ΠΟΙΟΤΗΤΑ ΥΠΗΡΕΣΙΩΝ ΥΓΕΙΑΣ - ΔΙΔ.ΕΡΕΥΝΗΤΡΙΑ ΚΑ ΑΓΓΕΛΙΚΗ ΛΕΝΑΚΑΚΗ

ANGELIKI LENAKAKI <angela.lenakaki@gmail.com> 14 Φεβρουαρίου 2020 - 3:42 μ.μ.
Προς: dimitrakalograna@gmail.com, zougoutheo@gmail.com, efi.christofilou@gmail.com, sstaikoglou@gmail.com, mariataratzi@gmail.com, petrakidemetra11@gmail.com, mariahatzo@gmail.com, c.karounis@gmail.com, artanag@hotmail.com, mary kourti <nursemak@yahoo.gr>, megglezopoulou@yahoo.gr, ΕΓΓΛΕΖΟΠΟΥΛΟΥ ΑΔΑΜΑΝΤΙΑ <ad.englezopoulou@laiko.gr>
Κρυφή κοιν.: anstefanopoulos@gmail.com, Aggeliki Lenakaki <antzela.lenakaki@gmail.com>

Αγαπητές Συμμετέχουσες,

Σας ευχαριστώ πολύ για το ενδιαφέρον και την προθυμία σας να συμμετέχετε στην έρευνα που διεξάγεται στο Νοσοκομείο σας στο πλαίσιο της διδακτορικής μου διατριβής. Ελπίζω και εύχομαι η συμμετοχή σας να αποτελέσει μια ευχάριστη και δημιουργική εμπειρία για εσάς.

Τα επόμενα βήματα συνοψίζονται ως εξής:

1. Σας επισυνάπτω εδώ σε αυτό το μειλ τη φόρμα συγκατάθεσης και ένα σύντομο φύλλο εργασίας, τα οποία θα σας παρακαλούσα να συμπληρώσετε και να δώσετε στην κα Κούρτη έως την **Δευτέρα 17/02/2020.**

2. Την Τρίτη 18/02/2020 θα σας αποστείλω να συμπληρώσετε ακόμη ένα ερωτηματολόγιο και την ατζέντα/ημερήσια διάταξη των ομαδικών σεμιναρίων.

3. Κατά τη διάρκεια της επόμενης εβδομάδας θα πραγματοποιηθούν κάποιες συνεντεύξεις (διάρκειας μιας ώρας περίπου) με κάποιες απο εσάς (θα στείλω ξεχωριστό μειλ για να προγραμματίσουμε τις συνεντεύξεις ατομικά με την κάθε μία). Στόχος των συνεντεύξεων είναι να προσδιοριστεί ένα κοινό πρόβλημα ποιότητας που αντιμετωπίζουν και οι 3 μονάδες (Εμφραγμάτων/ΜΕΘ/ΜΝ), το οποίο θεωρείτε πιο σημαντικό και με το οποίο θα θέλατε να ασχοληθούμε κατά τη διάρκεια των ομαδικών συνεδριών. Εγώ μετά θα προσαρμόσω την έρευνά μου επάνω στο δικό σας το πρόβλημα. Στην ουσία όλη η έρευνα και τα αποτελέσματά μου εξαρτώνται από το πόσο πολύ θα σας βοηθήσω τελικά να συμφωνήσετε, να κατανοήσετε και να επιλύσετε εσείς οι ίδιοι το πρόβλημά σας μέσω των "συνεδριών ομαδικής μοντελοποίησης" , όπως λέγονται.

4. Την Τετάρτη 26/2 και ώρα 08.00-13.00 και την Παρασκευή 28/2 ώρα 08.00-12.00 θα πραγματοποιηθούν οι συνεδρίες ομαδικής μοντελοποίησης. Στόχος των συνεδριών είναι να κατανοήσετε καλύτερα το πρόβλημα ποιότητας που θα έχετε επιλέξει, να βρείτε λύσεις και στρατηγικές αντιμετώπισης και να προγραμματίσετε βήματα για την εφαρμογή τους. Θα ήθελα να διευκρινίσω ότι δεν πρόκειται για κάποιου είδους μαθήματα ή σεμινάρια που θα παραδίδω εγώ σε εσάς, αλλά για εργαστήρια (workshops) ενεργής συμμετοχής και αλληλεπίδρασης μεταξύ σας. Εσείς ως ειδικοί(experts) έχετε τη γνώση, και εγώ ως "διευκολύντρια" (facilitator) με τη βοήθεια ενός "μοντελοποιού" (modeller) σας βοηθάμε να αποτυπώσετε όλη τη γνώση σας σε ένα μοντέλο, από το οποίο μετά μπορούμε μαζί να διεξάγουμε διάφορα συμπεράσματα και να αξιολογήσουμε διαφορετικές στρατηγικές επίλυσης του προβλήματός σας.

5. Αμέσως μετά τις συνεδρίες θα σας ζητήσω να συμπληρώσετε ακόμη δύο ερωτηματολόγια, και αργότερα ίσως χρειαστεί να πάρω ακόμη ορισμένες συνεντεύξεις.

Ελπίζω να σας είναι όλα κάπως πιο ξεκάθαρα τώρα. Για περαιτέρω πληροφορίες, παρακαλώ μη διστάσετε να επικοινωνήσετε μαζί μου.
Εύχομαι καλή αρχή στην έρευνά μας και καλό Σαββατοκύριακο.

Με εκτίμηση,

Αγγελική Λενακάκη
--

Kind regards,

Angela Lenakaki

PhD Candidate
System Dynamics Group
Dept of International Studies and Political Science (DEMS), University of Palermo

International PhD in Model Based Public Planning, Policy Design and Management
University of Palermo (Italy), University of Bergen (Norway), Radboud University of Njimegen (Netherlands)

Email: angeliki.lenakaki@community.unipa.it, angeliki.lenakaki@student.ru.nl , angela.lenakaki@gmail.com

Appendix 8: Telephone Contact Guide

University of Palermo
Department of International Studies and Political Science (DEMS) - System Dynamics Group
International PhD in Model Based Public Planning, Policy Design and Management
PhD Candidate: Angeliki Lenakaki

Telephone Contact Guide for participant stakeholders in the research conducted by Mrs Angeliki Lenakaki, PhD candidate of the University of Palermo, for her PhD Thesis titled "Why do traditional Performance Management Systems in Healthcare not always lead to improved performance? Outlining the unintended consequences of the Greek Healthcare Reform in a public Hospital through a DPM approach".

Introduction

I will use telephone call, rather than email, as a means for the first communication with potential participants because communication by telephone is more personal and more interactive. I can explain better what it is I want to do and I will be able to identify and address their doubts and concerns directly and immediately. Whereas, by mail, they may reject my offer very easily just because they do not understand exactly what it is they will need to do or because they feel overwhelmed from work and they will not even read my mail.

During the telephone communication, which will be our first contact with the participants, the following information will be provided (the same information will be repeated as an introduction to the face-to-face interview, when and if the person agrees to be interviewed, of course, during the phone call):

Telephone Contact Guide

• My name is Angeliki Lenakaki, I am a PhD candidate in Public Governance in University of Palermo and I am contacting you to express my interest to collaborate with you and your hospital/organisation for my PhD research purposes.

• The topic of my PhD work is the "Assessment of the dynamic impact of performance measurement on hospital services". In fact, my aim is to better understand performance of hospital services and the mechanisms behind it. The research is conducted through interviews and GMB sessions, which are a kind of 4-hour workshops with the participation of 5-7 persons (the gatekeeper and 5-6 key stakeholders of the hospital) such as managers, doctors, nurses, health workers and patients.

• I contact you for an interview, since you as a hospital quality manager are the absolute expert on the issue I am investigating. You are identified as the most suitable person for my research purposes, because as a quality manager you have specific knowledge, experience and a more holistic and complete view of hospital performance compared to any other individual inside and outside the hospital. Interviewing you would help me to understand better what performance of hospital services really is about.

• What I am interested in is your own experience and your own personal view. I am not looking for anything specific and therefore there are no "right" and "wrong" answers.

• The data is confidential and anonymous, meaning no names, hospital titles, participant names etc. will be mentioned, and will only be used for research purposes.

• Interviews will be tape-recorded and then analysed only by the interviewer- researcher to inform a model of hospital performance he is preparing. She will be the only person who has access to the interview data. Literal quotations and paraphrasing will be used in order to justify the model building, but any identifiable information (name, function, position, company title, etc.) will be changed. Participants will receive the final draft of the thesis where literal quotations exist, before submission, and they will have the right to correct or delete any of the quotations that they do not want to be included in the thesis. Only the final text will be included in the thesis, after changes in identifiers and additional corrections of participants.

• It will take us about 45-60 minutes to complete the interview, and we will need another 20-30 minutes for the debriefing, so it will take about one and a half hour in total.

• During this debriefing, I will actually explain to you what are the next steps of this research, what are the GMB sessions, and what are the benefits for the hospital of participating in such a session. I will give you the chance to organise a GMB session in your hospital which our research team will facilitate (without any cost, of course) and I will explain to you all relevant details. In that case, you will help us identify the participants and organise the practicalities of those workshops.

• If you would be interested to participate, then we can arrange an appointment (date, time & place) at your convenience for the interview. You can take some time to think about it and let me know.

Appendix 9a: Informed Consent & Privacy Statement Form

University of Palermo
Department of International Studies and Political Science (DEMS) - System Dynamics Group
International PhD in Model Based Public Planning, Policy Design and Management
PhD Candidate: Angeliki Lenakaki

Informed Consent Form for stakeholders of a Public Hospital, invited to participate in the research conducted by Mrs Angeliki Lenakaki, PhD candidate of the University of Palermo, for her PhD Thesis titled "Why do traditional Performance Management Systems in Healthcare not always lead to improved performance? Outlining the unintended consequences of the Greek Healthcare Reform in a public Hospital through a DPM approach".

This Informed Consent Form has two parts:
- **Information Sheet (to share information about the study with you)**
- **Certificate of Consent (for signatures if you choose to participate)**

You will be given a copy of the full Informed Consent Form

Part I: Information Sheet

Introduction
My name is Angeliki Lenakaki, I am a PhD candidate in the Department of Public Governance of the University of Palermo and I would like to invite you to participate in the research I am conducting for my PhD Thesis.
I am going to give you information and invite you to be part of this research, however you do not need to decide today whether or not to participate. Before you decide, you can talk to anyone you feel comfortable with about the research. This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them freely.

Purpose of the research
The topic of my PhD work is "Overcoming the limits of traditional Performance Measurement in Public Hospitals: A Dynamic Performance Management approach to improve performance of hospital services". In order to address this topic, I will conduct a case-study in the public hospital in which you are working in, and try to assess the dynamic impact of the performance measurement system applied on the performance of the healthcare services produced, and I will do that using the so-called Dynamic Performance Management approach.
As a first step, described in my first research question, I will try to better understand performance of hospital services and the mechanisms behind it. More specifically, I will try to explore the mechanisms of Performance in the Kidney transplant unit, Intensive Care Unit and Heart Attack Unit of your hospital, and this is where participants will be involved. I would like to learn from the participant stakeholders, from the real people working in the organization and having all the knowledge stored in their mental models, what performance really means, how is it built, what it affects and what is it affected by.

Type of Research Intervention
This research will involve your participation in:
1. Two to three Group Model Building Sessions, facilitated by the researcher. Those sessions will have a duration of five hours each, and around ten people will participate in them.
2. One to two Interviews, with a duration of around one hour each
3. Filling in a number of Questionnaires

Participant Selection
You are being invited to take part in this research because I believe that your experience and/or knowledge and expertise as a patients or a hospital worker can contribute much to my understanding and knowledge of performance mechanisms in hospitals. You are identified as the most suitable persons for my research purposes, because you have specific knowledge, experience and a more holistic and complete view of hospital performance compared to any other individuals inside and outside the hospital. Interviewing you and having you participate in the modelling sessions I am organizing would help me to understand better what performance in hospital services really is about.

Voluntary Participation
Your participation in this research is entirely voluntary. It is your choice whether to participate or not.

If you choose not to participate, this will not affect you or the hospital in any way. If you are a patient, all the services you receive will continue and nothing will change. If you are a worker, the choice that you make will have no bearing on your job or on any other work-related issue, evaluation or report.
If you choose to participate, you may change your mind later and stop participating at any moment, even if you agreed and signed the consent earlier.

Procedures
We are inviting you to take part in this research project. As a participant, you will help us learn more about what is performance of hospital services and help us build a model of Performance of the Kidney transplant unit, Intensive Care Unit and Heart Attack Unit of your hospital. If you accept to participate, you will be asked to take part in:
-An interview with the researcher, Mrs Lenakaki. During the interview, she will sit down with you in a comfortable place at the hospital. If it is better for you, the interview can take place in your home or a friend's home. If you do not wish to answer any of the questions during the interview, you may say so and the interviewer will move on to the next question. No one else but the interviewer will be present unless you would like someone else to be there. The information recorded is confidential, and no one else except me will access to the information documented during your interview. The entire interview will be tape-recorded, but no-one will be identified by name on the tape. The tape will be safely stored and secured in my University's cloud storage. The information recorded is confidential, and no one else except me will have access to the tapes.
-Three modeling sessions with 9-10 other participants, all stakeholders of the same hospital. Those Group Model Building sessions will be facilitated by the researcher, Mrs Lenakaki. The group discussion will start with the researcher, making sure that you are comfortable and you still wish to participate. You can also answer questions about the research that you might have. Then we will ask questions about hospital performance and give you time to share your knowledge. The sessions will take place in the hospital's amphitheater, and no one else but the participant stakeholders and the facilitator will be present. The entire discussion will be tape-recorded, but no-one will be identified by name on the tape. The tape will be kept [explain how the tape will be stored]. The tape will be safely stored and secured in my University's cloud storage. The information recorded is confidential, and no one else except me will have access to the tapes.
-Before or after the interviews and sessions, you will be asked to fill in some questionnaires and workbooks, provided by the researcher, Mrs Lenakaki, and collected by her. If you do not wish to answer any of the questions included in the questionnaires, you may skip them and move on to the next question. The information recorded will be confidential, your name will not be included on the forms, only a number will identify you, and no one else except the researcher will have access to your questionnaire.
The questions during the interviews, sessions and questionnaires will be around performance of hospital services in the Kidney transplant unit, Intensive Care Unit and Heart Attack Unit of your hospital. How do you perceive it, how you define it, what people do about it, how is it recognized, what it affects and what is it affected by, etc. We will not ask you to share personal beliefs, practices or stories and you do not have to share any knowledge that you are not comfortable sharing.

Duration
The research takes place over 16 months in total, from around June 2019 to November 2020. During that time, we will visit your hospital three times for conducting the interviews and the Group Model Building sessions. Interviews will be organized at your convenience, one month prior to or one month after the Group Model Building sessions (January 2020 or April 2020), at a place and time that you decide. Practical arrangements will be undertaken between you and the researcher. Interviews will last for about one hour each.
The three modeling sessions will be held once and will take about five hours each. Two of them will be held in February 2020, and last one of them (the follow-up session) between July-September 2020. The sessions will be organized at your hospital during working hours, with the agreement of the management board. In case you decide to participate, you will be excused from your duties during that time.

Risks
What the researcher is interested in is your own experience and your own personal view. The researcher is not looking for anything specific and therefore there are no "right" and "wrong" answers. The discussion is on personal experiences and opinions regarding performance issues, and in general no personal information is sought. However, there is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable talking about some of the topics, although we do not wish for this to happen. You do not have to

answer any question or take part in the discussion if you feel the question(s) or discussion(s) are too personal or if talking about them makes you uncomfortable for any reason.

Benefits
There will be no direct benefit to you as a participant. However, your participation is likely to help you understand better performance issues and use this new knowledge to improve your everyday work in the future as a health worker or as a patient. Furthermore, your participation is likely to help your hospital decision makers understand better performance mechanisms and create measures to improve quality of health services produced.

Reimbursements
You will not be provided any incentive to take part in the research.

Confidentiality
The data is confidential and anonymous, meaning no names, hospital titles, participant names etc. will be mentioned by the researcher in her thesis and any eventual publications, and will only be used for research purposes. We will not be sharing information about you to anyone outside of the research team. The information that we collect from this research project will be kept private. Any information about you will have a number on it instead of your name. Only the researcher will know what your number is. Interviews will be tape-recorded and then analyzed only by the interviewer- researcher to inform a model of hospital performance she is preparing. She will be the only person who has access to the interview data. It will not be shared with or given to anyone except the researcher and her tutor at the University of Palermo, Prof. Enzo Bivona. Literal quotations and paraphrasing will be used in order to justify the model building, but any identifiable information (name, function, position, company title, etc.) will be changed.
As far as the Group Model Building sessions are concerned, we will encourage group participants to respect confidentiality, but we cannot guarantee it. The researcher will ask you and others in the group not to talk to people outside the group about what was said in the group. In other words, she will ask each of you to keep what was said in the group confidential. You should know, however, that we cannot stop or prevent participants who were in the group from sharing things that should be confidential, nor will we press any charges against them in case that happens.

Sharing the Results
Nothing of what you say will be shared with anybody outside the research team, and nothing will be attributed to you by name. The knowledge acquired from this research will be shared with you and the hospital board during the third Group Model Building session, and discussed there before it is made widely available to the public.
Following this third and last group session, the researcher will review and then submit her research thesis, and later after her thesis defense and graduation she may publish the results so that other interested people may learn from the research.

Right to Refuse or Withdraw
You do not have to take part in this research if you do not wish to do so, and choosing to participate will not affect the services you receive from the hospital or your job in the hospital, your evaluation or report in any way.
You may stop participating in the interview(s) and/or group session(s) at any time that you wish without your job being affected. I will give you an opportunity at the end of the interview/discussion to review your remarks, and you can ask to modify or remove portions of those, if you do not agree with my notes or if I did not understand you correctly. Furthermore, all participants will receive the final draft of the thesis where literal quotations exist, before submission, and they will have the right to correct or delete any of the quotations that they do not want to be included in the thesis. Only the final text will be included in the thesis, after changes in identifiers and additional corrections of participants.

Who to Contact
If you have any questions, you can ask them now or later. You may contact the researcher herself :
Angeliki Lenakaki, tel: +393897850167, e-mail: angeliki.lenakaki@community.unipa.it
The research proposal and the ethics protocol has been reviewed and approved by the Hospital's board of directors and Ethics and Research committee. The Consent Form is prepared according to the standards of the World Health Organization (WHO) for qualitative research and with respect to the General Data Protection Regulation (GDPR) of the Data Protection Act 2018 (DPA 2018).

Part II: Certificate of Consent

Statement of informed consent by the participant

As a stakeholder of a Public Hospital, I have been invited to participate in the research conducted by Mrs Angeliki Lenakaki, PhD candidate of the University of Palermo, for her PhD Thesis titled "Overcoming the limits of traditional Performance Measurement in Public Hospitals: A Dynamic Performance Management approach to improve performance of hospital services".

The nature and general purpose of this research project as part of her PhD Thesis has been explained to me, and I voluntarily agree to fully participate in the Group Model Building sessions and interviews conducted by the researcher and fill in the questionnaires and workbooks provided, all of which will contribute to the ongoing PhD research and be part of the PhD Thesis and eventual publications of Mrs Angeliki Lenakaki.

I agree for the Group Model Building sessions and interviews to be audio recorded for research purposes and I understand that although my voice will be recorded (audio taped), my identity will not be revealed in any publication, document, recording, or any other means associated with this research. Only the researcher Mrs Lenakaki will have access to the recordings.

I have red and been explained the foregoing information. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent fully and voluntarily to be a participant in this research project, I agree to the processing of my personal data for research purposes and I agree to respect the confidentiality of the identities of other participants and of the information revealed to me during the group model building sessions.

Name/Lastname of Participant_____

Signature of Participant _____

Date _____
Day/month/year

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands that the following will be done:
1. Three Group Model Building Sessions, with a duration of five hours each
2. One or two Interviews, with a duration of around one hour each
3. Filling in a number of Questionnaires and workbooks

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.
Print Name of Researcher/person taking the consent_____
Signature of Researcher /person taking the consent_____
Date _____
Day/month/year

Appendix 9b: Informed Consent Form in Greek

UNIVERSITÀ DEGLI STUDI DI PALERMO

University of Palermo
Department of International Studies and Political Science (DEMS) - System Dynamics Group
International PhD in Model Based Public Planning, Policy Design and Management
PhD Candidate: Angeliki Lenakaki

Μέρος ΙΙ: Πιστοποιητικό συγκατάθεσης

Δήλωση ενήμερης συγκατάθεσης από συμμετέχοντα

Ως εμπλεκόμενος/ενδιαφερόμενος σε δημόσιο νοσοκομείο, έχω προσκληθεί να συμμετάσχω στην έρευνα της κας Αγγελικής Λενάκακη, υποψήφιας διδάκτωρ του πανεπιστημίου του Παλέρμο, για τη διδακτορική της διατριβή με τίτλο "Η υπέρβαση των ορίων της παραδοσιακής μέτρησης απόδοσης στα δημόσια νοσοκομεία: Μια δυναμική προσέγγιση διαχείρισης της απόδοσης για τη βελτίωση της ποιότητας των νοσοκομειακών υπηρεσιών».

Η φύση και ο σκοπός της έρευνας που διεξάγεται στο Νοσοκομείο, στο πλαίσιο της διδακτορικής διατριβής της κας Λενακάκη, μου εξηγήθηκε και συμφωνώ οικειοθελώς να συμμετάσχω πλήρως στις συνεδρίες μοντελοποίησης και στις συνεντεύξεις που διεξάγει η ερευνήτρια κα Λενακάκη, καθώς επίσης και να συμπληρώσω τα ερωτηματολόγια και τα βιβλία εργασίας, τα οποία θα συμβάλλουν στην διδακτορική της έρευνα και θα αποτελέσουν μέρος της διδακτορικής διατριβής και των ενδεχόμενων δημοσιεύσεων της κ. Αγγελικής Λενάκακη.

Συμφωνώ να καταγραφούν και να ηχογραφηθούν οι συνεδρίες μοντελοποίησης και οι συνεντεύξεις για ερευνητικούς σκοπούς, και κατανοώ ότι αν και η φωνή μου θα ηχογραφηθεί, η ταυτότητά μου δεν θα αποκαλυφθεί σε καμία δημοσίευση, έγγραφο, καταγραφή ή οποιοδήποτε άλλο μέσο που σχετίζονται με αυτή την έρευνα. Μόνο η ερευνήτρια κ. Λενάκακη θα έχει πρόσβαση στο ηχογραφημένο υλικό.

Έχω διαβάσει και κατανοήσει τις παραπάνω πληροφορίες του ενημερωτικού δελτίου. Είχα την ευκαιρία να θέσω ερωτήσεις σχετικά με αυτό και όλες οι ερωτήσεις που έθεσα έχουν απαντηθεί ικανοποιητικά. Συμφωνώ πλήρως και οικειοθελώς να συμμετάσχω σε αυτό το ερευνητικό πρόγραμμα, συμφωνώ ως προς την χρησιμοποίηση και επεξεργασία των προσωπικών μου δεδομένων για ερευνητικούς σκοπούς και συμφωνώ να σεβασθώ την εμπιστευτικότητα των ταυτοτήτων των άλλων συμμετεχόντων και των πληροφοριών που μου αποκαλύπτονται κατά τη διάρκεια των συνεδριών ομαδικής μοντελοποίησης.

Όνομα / Επώνυμο Συμμετέχοντα _____

Υπογραφή Συμμετέχοντα _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Δήλωση του ερευνητή / ατόμου που λαμβάνει τη συγκατάθεση

Έχω διαβάσει με ακρίβεια το ενημερωτικό δελτίο στον δυνητικό συμμετέχοντα και κατά το μέγιστο των δυνατοτήτων μου επιβεβαίωσα ότι ο συμμετέχων κατανοεί ότι θα γίνουν τα εξής:
1. Τρεις Ομαδικές Συνεδρίες Μοντελοποίησης, διάρκειας πέντε ωρών η καθεμία.
2. Μία ή δύο Συνεντεύξεις, διάρκειας περίπου μίας ώρας η καθεμία.
3. Συμπλήρωση ορισμένων ερωτηματολογίων και βιβλίων εργασίας.
Επιβεβαιώνω ότι δόθηκε στον συμμετέχοντα η ευκαιρία να υποβάλει ερωτήσεις σχετικά με την έρευνα και ότι όλες οι ερωτήσεις που τέθηκαν από τον συμμετέχοντα έχουν απαντηθεί σωστά και με τον καλύτερο δυνατό τρόπο. Επιβεβαιώνω ότι ο συμμετέχων δεν εξαναγκάσθηκε με κανένα τρόπο ούτε πιέσθηκε να δώσει τη συγκατάθεσή του, αλλά αντίθετα η συγκατάθεση δόθηκε ελεύθερα και οικειοθελώς.

Ένα αντίγραφο αυτού του πιστοποιητικού συγκατάθεσης έχει παρασχεθεί στον συμμετέχοντα.

Όνομα ερευνητή / προσώπου που λαμβάνει τη συγκατάθεση _____
Υπογραφή ερευνητή / που λαμβάνει τη συγκατάθεση _____
Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Appendix 10: Interview Guide for the Disconfirmatory Interviews

University of Palermo
Department of International Studies and Political Science (DEMS) - System Dynamics Group
International PhD in Model Based Public Planning, Policy Design and Management
PhD Candidate: Angeliki Lenakaki

Interview Guide for participant stakeholders in the research conducted by Mrs Angeliki Lenakaki, PhD candidate of the University of Palermo, for her PhD Thesis titled "Why do traditional Performance Management Systems in Healthcare not always lead to improved performance? Outlining the unintended consequences of the Greek Healthcare Reform in a public Hospital through a DPM approach".

Introduction

• Thank you for accepting to take part in my research project, for inviting me here and for devoting your time to talk to me today. It really means a lot to me, as a senior PhD student trying to grasp all the knowledge and expertise of hospital managers like you and incorporate it in a model of hospital performance. I hope that our interview today will be interesting also for you.
• As you know the aim of the research and of our interview today is to better understand performance of hospital services and the mechanisms behind it.
• As I mentioned before, I chose to contact you for an interview, since you as a hospital quality manager are the absolute expert on the issue I am investigating. You are identified as the most suitable person for my research purposes, because as a quality manager you have specific knowledge, experience and a more holistic and complete view of hospital performance compared to any other individual inside and outside the hospital. Interviewing you would help me to understand better what performance of hospital services really is about.
• What I am interested in is your own experience and your own personal view. I am not looking for anything specific and therefore there are no "right" and "wrong" answers.
• You will be asked to sign an informed consent form and a data privacy form. The first one is for me to make sure you agree to participate in this research on your own will, and the second one is for you to make sure that all your personal details, all your sayings and data are safe. It is also very important to remember that even after signing those forms, you can still change your mind and withdraw from participating at any moment, if you feel that you do not want to participate anymore for any reason.
• Now, I would like to check out a few things with you before we get started. First of all, I know that when we spoke you agreed to take part in the interview, but I just want to check that you are still ok with it.
• As I mentioned, it will take us about 45-60 minutes to complete the interview, and then we will need another 20-30 minutes for the debriefing, so it will take about one and a half hour in total. Is that ok with you?
• It is important to let you know that if you want to stop the interview at any time, or you want to take a break, you can. Also, if I make a question that feels uncomfortable or that you do not want to answer for any reason, please feel free to say that you do not wish to answer that. It is absolutely fine.
• As you know, the data is confidential and anonymous, meaning that I will not mention any credentials, hospital titles, participant names etc. in the text, and you should also know that all the data collected will only be used for my research purposes. The interview will be tape-recorded and then analysed only by me to inform a model of hospital performance that I am building. I will be the only person who has access to your interview and your real personal data.
• As I will not only paraphrase but might use literal quotations of participants' sayings in my thesis, participants will receive the final draft of the thesis where literal quotations exist, and will have the chance to correct or delete them. So you have the right to check, correct or delete any of your quotations that you do not want to be included in my thesis finally. Only the final text will be included in the thesis, after changes in identifiers and additional corrections of participants. Is all that still fine with you?
• As I mentioned in our phone call, after the interview we will take some time to talk about the GMB sessions and the possibility for you and your hospital to participate also in that. Is that still ok with you?
• Ok, thank you very much. We can start our interview then, if you are ready.

PART ONE - Open Questions

Performance Roles & Duties

-What is your role in the hospital?
-What are your main responsibilities/duties?
-Tell me what you usually do in a normal workday?
-What are the challenges/obstacles that you encounter?
-Who are the people who help you in your work?
-Who are the people who create problems in your work?
-Who else is involved in performance issues except from you?
-Who are the key stakeholders that manage for performance in the hospital in each department?
-What are their roles and main responsibilities/duties?
- Are there any conflicting interests between their duties and targets?
- Are there any trade-offs between their duties and targets?
-If yes, then how do you set priorities on targets?

Performance Definition and Related variables

-What is hospital performance for you, based on your experience?
-Why is hospital performance important?
-For who is hospital performance important?
-Why is performance important for health workers?
-Why is performance important for patients?
-Why is performance important for managers?
-How does it relate to hospital performance?
-How does it relate to hospital safety?
-How does it relate to hospital reputation and demand for hospital services?
-What is happening in a hospital where there is poor performance level?
-What is happening in a hospital where there is good performance level?

Performance Mechanisms
-How can you achieve that good performance level?
-What are the most important factors that help to achieve good performance level?
-Is it relatively easy or difficult to achieve and maintain a good level of performance in the hospital? Why?
-What are the things that most people do not realise/understand about building and keeping a good performance level in the hospital?
-Does it take time to be built? Why?
-Does it take time to be destroyed ? Why?
-How do you think performance is developing in your hospital during the last 10 years?
-How would you sketch it in a diagram? (Give them a paper to draw)

Performance Measures
-In what departments is performance mainly found? Why is it so?
-How do you try to foster performance in those departments?
-In what operations/processes is performance mainly found? Why is it so?
-How do you try to foster performance in those processes?
-How do you believe that those actions of yours are affecting performance?
-Which individuals are critical for performance building?
-How are they involved in performance building?
-Why do you think that not everybody is sensitised to fostering performance?
-Why is performance not always a priority?
-What is the level of implementation of rules and policies regarding hospital performance? Why?
- What are practical hinders to implementation of performance measures?

PART 2 – CLD Disconfirmation
We will discuss a model of hospital performance. What we are interested in is your own experience and your own personal view of things. There are no right or wrong answers.

PART 3 – GMB explanation and invitation

• During this debriefing after the interview, I will actually explain to you what are the next steps of this research, what are the GMB sessions, and what are the benefits for the hospital of participating in such a session. I will give you the chance to organise a GMB session in your hospital which our research team will facilitate (without any cost, of course) and I will explain to you all relevant details. In that case, you will help us identify the participants and organise the practicalities of those workshops.

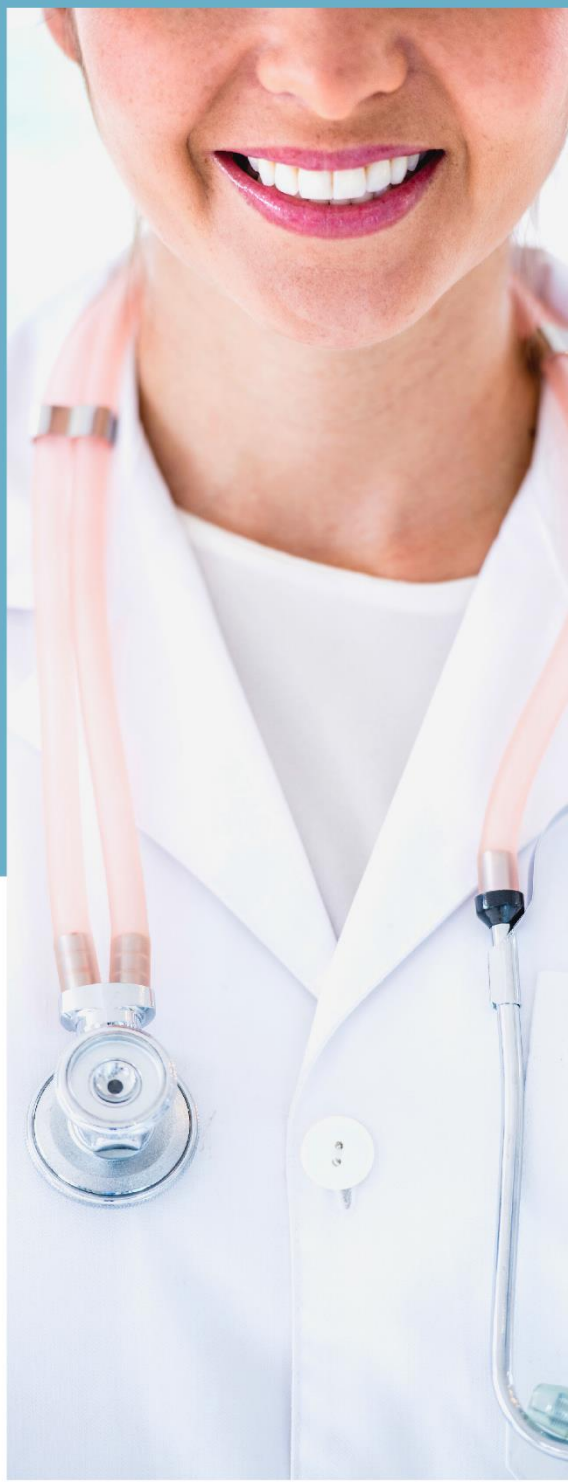
Closing remarks
Thank you for sharing with me your knowledge and your experience. Thank you for your time, I know your time is valuable and I really appreciate that you devoted all this time to me. That was all the questions I had for you. Are there any questions, remarks, from your side?
Thanks again. We will be in touch, I will let you know when the final draft of the research will be ready, and I will send it to you for approval and revisions of your quotes.

Appendix 11: Participants' Agenda for the GMB Sessions

Συνεδρίες Μοντελοποίησης

ΠΟΙΟΤΗΤΑ ΥΠΗΡΕΣΙΩΝ ΥΓΕΙΑΣ

στις Μονάδες Εμφραγμάτων/ΜΝ/ΜΕΘ του Λαϊκού Νοσοκομείου Αθηνών



Τετάρτη 26 Φεβρουαρίου 2020
Ώρα: 08.00 - 13.00
Αίθουσα Φώτης Παυλάτος
5ος όροφος

Παρασκευή 28 Φεβρουαρίου
Ώρα: 08.00 - 12.00
Αίθουσα Μουτσόπουλος
Κτίριο Παθολογικής Φυσιολογίας

Ημερήσια Διάταξη

1η Συνεδρία
26/02, 8.00 π.μ.

Διαλείμματα των 15' περίπου κάθε μία ώρα

ΕΙΣΑΓΩΓΙΚΑ ΣΤΟΙΧΕΙΑ

Η ερευνήτρια, η Διδ. Διατριβή, Η έρευνα στο Λαϊκό

Η ΜΕΘΟΔΟΣ

Συνεδρίες Ομαδικής Μοντελοποίησης, Δυναμικά Μοντέλα, Διαδικασία, Συστήματα

ΟΡΙΣΜΟΣ ΤΟΥ ΠΡΟΒΛΗΜΑΤΟΣ

Ορισμός, Ιστορικό, Καμπύλη Αναφοράς, Χάσμα

ΕΞΕΡΕΥΝΩΝΤΑΣ ΤΙΣ ΑΙΤΙΕΣ ΤΟΥ ΠΡΟΒΛΗΜΑΤΟΣ

Παράγοντες Επιρροής, Αιτιώδεις Σχέσεις, Λούπες

ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

Για περισσότερες πληροφορίες, παρακαλείσθε όπως επικοινωνήσετε με την ερευνήτρια.

Αγγελική Λενακάκη
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Radboud Universiteit

UNIVERSITÀ DEGLI STUDI DI PALERMO

Ημερήσια Διάταξη

2η Συνεδρία
28/02, 8.00 π.μ.

Διαλείμματα των 15' περίπου κάθε μία ώρα

ΑΝΑΣΚΟΠΗΣΗ ΤΟΥ ΜΟΝΤΕΛΟΥ

Το πρόβλημα, Αιτίες & Συνέπειες του προβλήματος

ΣΤΡΑΤΗΓΙΚΟΣ ΣΧΕΔΙΑΣΜΟΣ

Στρατηγικές Επίλυσης, Σημεία Παρέμβασης

ΙΕΡΑΡΧΗΣΗ & ΕΠΙΛΟΓΗ ΣΤΡΑΤΗΓΙΚΩΝ

...με βάση τη ευκολία εφαρμογής και το μακροπρόθεσμο αντίκτυπο

ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΣ ΕΠΟΜΕΝΩΝ ΕΝΕΡΓΕΙΩΝ

Ρόλοι, Ενέργειες, Χρονοδιάγραμμα

ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

Για περισσότερες πληροφορίες, παρακαλείσθε όπως επικοινωνήσετε με την ερευνήτρια.

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UNIVERSITÀ DEGLI STUDI DI PALERMO

Appendix 12a: Pretest Questionnaire – Initial Understanding of Hospital Performance before the GMB Sessions

University of Palermo
Department of International Studies and Political Science (DEMS) - System Dynamics Group
International PhD in Model Based Public Planning, Policy Design and Management
PhD Candidate: Angeliki Lenakaki

Questionnaire for the Assessment of change in participants' mental models during a Group Model Building Intervention, for participant stakeholders in the research conducted by Mrs Angeliki Lenakaki, PhD candidate of the University of Palermo, for her PhD Thesis titled "Why do traditional Performance Management Systems in Healthcare not always lead to improved performance? Outlining the unintended consequences of the Greek Healthcare Reform in a public Hospital through a DPM approach".

PRETEST QUESTIONNAIRE

Participant's Identification Number: _____

Signature of Participant _____

Date _____
Day/month/year

Question 1:
Please write down the central problem of the performance of services in the Department/Unit of the hospital where you work or have been admitted.

Question 2:
Please describe the causes of the problem.

Question 3:
Please describe the effects of the problem

Question 4:
Please mention three options to solve the problem.

Name/Lastname of the Researcher/person taking the form_____

Signature of Researcher /person taking the form_____

Date _____
Day/month/year

Appendix 12b: Pretest Questionnaire in Greek

University of Palermo
Department of International Studies and Political Science (DEMS) - System Dynamics Group
International PhD in Model Based Public Planning, Policy Design and Management
PhD Candidate: Angeliki Lenakaki

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΠΡΙΝ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα _____

Υπογραφή Συμμετέχοντα _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε ποιο θεωρείτε εσείς ως το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Appendix 13a: Posttest Questionnaire – Final Understanding of Hospital Performance after the GMB Sessions

University of Palermo
Department of International Studies and Political Science (DEMS) - System Dynamics Group
International PhD in Model Based Public Planning, Policy Design and Management
PhD Candidate: Angeliki Lenakaki

Questionnaire for the Assessment of change in participants' mental models during a Group Model Building Intervention, for participant stakeholders in the research conducted by Mrs Angeliki Lenakaki, PhD candidate of the University of Palermo, for her PhD Thesis titled "Why do traditional Performance Management Systems in Healthcare not always lead to improved performance? Outlining the unintended consequences of the Greek Healthcare Reform in a public Hospital through a DPM approach".

POSTTEST QUESTIONNAIRE

Participant's Identification Number: _____

Signature of Participant _____

Date _____
Day/month/year

Question 1:
Please write down the central problem of the performance of services in the Department/Unit of the hospital where you work or have been admitted.

Question 2:
Please describe the causes of the problem.

Question 3:
Please describe the effects of the problem

Question 4:
Please mention three options to solve the problem.

Name/Lastname of the Researcher/person taking the form_____

Signature of Researcher /person taking the form_____

Date _____
Day/month/year

Appendix 13b: Posttest Questionnaire in Greek

University of Palermo
Department of International Studies and Political Science (DEMS) - System Dynamics Group
International PhD in Model Based Public Planning, Policy Design and Management
PhD Candidate: Angeliki Lenakaki

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΜΕΤΑ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα _____

Υπογραφή Συμμετέχοντα _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Appendix 14a: CICC Questionnaire – Evaluation of the GMB Sessions by the Participants

CICC Questionnaire

Dear participant in the modelling session(s),

This questionnaire evaluates the use of Group Model Building (GMB) in *exploring the mechanisms of Performance in the hospital.*

This questionnaire addresses the urgency of the problem of low performance, results of the modelling session(s), the effects of different aspects of the session(s), quality of the modelling-process and suggestions for future sessions. We politely invite you to answer these questions as best as you can. The results of this questionnaire will be used to improve the procedure that was used: Group Model-Building. Before addressing the sessions we would like to ask you for some background information.

All information will be treated confidentially.

My date of birth is..... .
I am a member of this organisation (hospital) since ..... .
My function/appointment in this organisation (hospital) is ..... .

Thank you for your co-operation.

Results of the modelling process

The following questions aim primarily at the discussions that were held while making the causal models, in the reports (with questions) between sessions as well as during the meetings. These questions also refer to the results of the analysis of data and simulations. The answers on the following questions fall in one of five categories:

strongly agree (sa)
agree (a)

agree nor disagree (a/d)

disagree (d)

strongly disagree (sd)

	sa 5	a 4	a/	d	sd
1. My insight into the problem has increased due to the mode cess.					
2. I think that, because of these meetings, we have reached a sh on of the problem.					
3. I support the conclusions/findings that were drawn during delling process, in general terms.					
4. The modelling process has given me more insight into the cohe veen the elements that compose the problem.					
5. The causal diagrams that were developed were the result of gration of diverse opinions and ideas of the participants.					
6. If I, with some people from my organisation, were to use the s roach in planning, and in dealing with problems, all persons would loy ow this plan to its natural conclusions.					
7. As a result of the modelling process it is still *unclear* to me wha ses of the problem, that play behind the scenes, are.					
8. The modelling process aided in the understanding of the opinion other participants.					
9. We could *not* reach a consensus.					
10. The use of causal diagrams has clarified the communication betv icipants about the problem.					
11. Our opinions are closer due to the modelling process.					
12. I will uphold the conclusions/findings of these meetings in fron er members of my organisation.					
13. The modelling process has given me more insight into the feedl cesses that play a role in the problem.					
14. The modelling process has given me *little* insight into the opin ideas about the problem of other participants.					
15. Some persons dominated the discussions.					

16. The modelling process has *not* given me insight into the possibil my organisation has in 'steering' the problem.					
17. I will try to convince others in my organisation of the importanc e conclusions.					
18. Using modelling in approaching the problem is efficient.					
19. All in all I think these meetings were successful.					

If you compare these meetings, using causal diagrams, with *normal meetings or conferences* in which you discuss *similar problems*, would you say these meetings:

		sa 5	a 4	a/	d	sd
1.	give *more* insight compared with normal meetings?					
2.	give *more quickly* insight compared with normal meetings?					
3.	result in a *better* communication between participants?					
4.	give *more quickly* rise to a shared vision between participants'					
5.	give rise to a *better* shared vision between participants?					
6.	give *more quickly* rise to commitment of participants?					
7.	give rise to *more* commitment of participants?					

Effects of different elements of Group Model Building

The meetings consisted of several aspects which may have contributed in different ways to the overall effect of the meetings. In the following questions you are asked to specify how much an aspect contributed to the overall effect. You can do this by scoring each element on a scale of -5 to +5, in which:

-5 = was of no use whatsoever, obstructed the sessions;
0 = did not obstruct, but was of no use either;
+5 = contributed very much.

	score -5 to +5
1. The fact that the diagrams were projected/recorded in a way that was visib :ybody.	
2. The fact that an outsider was accompanying as a 'group facilitator'.	
3. The opportunity for open and extensive discussion.	
4. The use of causal diagrams.	
5. Written reports (with questions) between sessions.	
6. Gathering the data needed for the quantitative model.	
7. Analysing the data.	
8. Simulation, using the quantitative model.	
9. Others,.....	

Quality of the Group Model Building project

The following questions aim at the quality of the modelling process. By 'problem' we again refer to the problem definition that was used in the modelling process: *(aim project).*

	sa 5	a 4	a/	d	sd
1. The current situation of my organisation was well mapped.					
2. The description of the situation to be reached was correct.					
3. In the modelling process the right definition of the problem was u					
4. In the modelling process all relevant information was used.					
5. The analysis of the information was correct.					
6. All issues or problem areas that needed attention were investigat					
7. In the modelling process *not* all useful solutions were discussed.					
8. In the modelling process the pros and cons of possible solutions v nded to.					
9. The choice of the most promising solution was based on sc ıments.					

10. In the modelling process the best solution was chosen.					

Suggestions for future sessions

The following questions can be of great use in planning future sessions.

What were the three best features of the sessions?

a) _____

_____

b) _____

_____

c) _____

_____

What were the three most disappointing features or problems of the sessions?

a) _____

_____

b) _____

_____

c) _____

_____

What specific suggestions would you make if meetings like these were to be organised or held again?

a) _____

_____

b) _____

_____

c) _____

_____

Thank you again for your co-operation.

Appendix 14b: CICC Questionnaire in Greek

Ερωτηματολόγιο CICC

Αγαπητέ/ή συμμετέχων/ουσα στη συνεδρία ομαδικής μοντελοποίησης,

Αυτό το ερωτηματολόγιο αξιολογεί τη χρήση της μεθόδου ομαδικής μοντελοποίησης (GMB) στη διερεύνηση των μηχανισμών ποιότητας ενός νοσοκομείου.

Αυτό το ερωτηματολόγιο εξετάζει τον επείγοντα χαρακτήρα του προβλήματος που διακυβεύεται, τα αποτελέσματα των συνεδριών μοντελοποίησης, τις επιπτώσεις των διαφόρων πτυχών της κάθε συνεδρίας, την ποιότητα της διαδικασίας μοντελοποίησης και τις προτάσεις για μελλοντικές συνεδρίες. Σας προσκαλούμε ευγενικά να απαντήσετε στις ερωτήσεις αυτές όσο καλύτερα μπορείτε. Τα αποτελέσματα αυτού του ερωτηματολογίου θα χρησιμοποιηθούν για τη βελτίωση της μεθόδου ομαδικής μοντελοποίησης που χρησιμοποιήθηκε (Group Model Building – GMB). Προτού ξεκινήσετε να αξιολογείτε τις συνεδρίες, θα θέλαμε να σας ζητήσουμε ορισμένες βασικές πληροφορίες.

Όλες οι πληροφορίες είναι εμπιστευτικές.

Η ημερομηνία γέννησής μου είναι .....
Είμαι μέλος αυτής της οργάνωσης (Νοσοκομείο) από .....
Η θέση/δουλειά μου σε αυτόν τον οργανισμό (Νοσοκομείο) είναι .....

Σας ευχαριστώ θερμά για την συνεργασία.

Αποτελέσματα της διαδικασίας μοντελοποίησης

Τα ακόλουθα ερωτήματα αποσκοπούν κυρίως στις ομαδικές συζητήσεις που διεξήχθησαν κατά την διάρκεια των συνεδριών μοντελοποίησης. Αυτά τα ερωτήματα αναφέρονται επίσης στα αποτελέσματα της ανάλυσης δεδομένων και των προσομοιώσεων. Οι απαντήσεις για τις ακόλουθες ερωτήσεις εμπίπτουν σε μία από τις πέντε κατηγορίες:

συμφωνώ απόλυτα (5)

συμφωνώ (4)

δε συμφωνώ ούτε διαφωνώ (3)

διαφωνώ (2)

διαφωνώ έντονα (1)

(Προσοχή: αντεστραμμένη κλίμακα Λικερτ, δηλαδή 5→1 αντί 1→5)

	sa 5	a 4	a/	d	sd
1. Η οπτική μου για το πρόβλημα έχει αυξηθεί λόγω της διαδικα τελοποίησης.					
2. Πιστεύω ότι, εξαιτίας αυτών των συνεδριών, έχουμε φτάσει σε ή οπτική για το πρόβλημα.					
3. Συμφωνώ με τα αποτελέσματα / συμπεράσματα που προέκυψαν ι ιαδικασία μοντελοποίησης, σε γενικές γραμμές.					
4. Η διαδικασία μοντελοποίησης μου έδωσε μια καλύτερη εικόνα γι δεση μεταξύ των στοιχείων που συνθέτουν το πρόβλημα.					
5. Το μοντέλο που αναπτύχθηκε ήταν αποτέλεσμα της ενσωμάτω ρορετικών απόψεων και ιδεών των συμμετεχόντων.					
6. Εάν εγώ και άλλοι στην οργάνωση χρησιμοποιούσαμε την σέγγιση στο σχεδιασμό και στην αντιμετώπιση των προβλημάτων μας, ικολουθούσαν πιστά αυτό το σχέδιο στα φυσικά συμπεράσματά του.					
7. Ως αποτέλεσμα της διαδικασίας μοντελοποίησης **δεν** είναι ακ ές για μένα ποιες είναι οι βαθιές αιτίες του προβλήματος.					
8. Η διαδικασία μοντελοποίησης με βοήθησε στην κατανόηση ψεων των άλλων συμμετεχόντων.					
9. Δεν επιτεύχθηκε καμία συμφωνία επι των πραγμάτων.					
10. Η χρήση του μοντέλου βοήθησε στην επικοινωνία μεταξύ μετεχόντων σχετικά με το πρόβλημα.					
11. Οι απόψεις μας είναι πιο κοντά λόγω της διαδικα τελοποίησης.					
12. Θα υποστηρίξω τα συμπεράσματα/πορίσματα/αποφάσεις αυτών αντήσεων μπροστά σε άλλα μέλη της οργάνωσής μου.					

13. Η διαδικασία μοντελοποίησης μου έδωσε περισσότερες πληροφ τις διαδικασίες ανατροφοδότησης (μπούμερανγκ/λούπες) που παίζουν μ πρόβλημα.					
14. Η διαδικασία μοντελοποίησης μου έδωσε ελάχιστη εικόνα ψεων και των ιδεών των άλλων συμμετεχόντων για το πρόβλημα.					
15. Ορισμένα μόνο άτομα κυριάρχησαν στις συζητήσεις.					
16. Η διαδικασία μοντελοποίησης δεν μου έδωσε αρκετές πληροφ τις δυνατότητες που έχει η οργάνωσή μου για να βελτιώσει το πρόβλημ					
17. Θα προσπαθήσω να πείσω και άλλους στην οργάνωσή μου γι ασία αυτών των συμπερασμάτων.					
18. Η χρήση μοντέλων για την προσέγγιση του προβλήματος ε τελεσματική.					
19. Συνολικά, πιστεύω ότι αυτές οι συνεδρίες ήταν επιτυχείς.					

Εαν συγκρίνουμε τις συνεδρίες μοντελοποίησης οπου χρησιμοποιήσαμε μοντέλα, με τις κανονικές ομαδικές συναντήσεις/συνεδριάσεις/συζητήσεις/meetings στις οποίες είστε συνηθισμένοι, για παρόμοια προβλήματα όπως το πρόβλημα της ποιότητας που προσπαθήσαμε να καταλάβουμε μαζί, θα λέγατε οτι οι συνεδρίες μοντελοποίησης:

	sa 5	a 4	a/	d	sd
1. Προσφέρουν περισσότερες γνώσεις σε σχέση με τις κανον αντήσεις εργασίας;					
2. Προσφέρουν ταχύτερα ενόραση σε σχέση με τις κανον αντήσεις εργασίας;					
3. Οδηγούν σε καλύτερη επικοινωνία μεταξύ των συμμετεχόντω					
4. Οδηγούν ταχύτερα σε μια κοινή οπτική μεταξύ μετεχόντων;					
5. Δημιουργούν μια καλύτερη κοινή οπτική μεταξύ μετεχόντων;					
6. Οδηγούν ταχύτερα σε μια κοινή δέσμευση των συμμετεχόντω					
7. Δημιουργούν περισσότερη δέσμευση των συμμετεχόντων;					

Επιδράσεις των διαφορετικών στοιχείων/πτυχών της μεθόδου Ομαδικής Μοντελοποίησης

Οι συνεδρίες μοντελοποίησης συνδυάζουν διάφορα στοιχεία/πτυχές οι οποίες μπορεί να έχουν συμβάλει με διαφορετικούς τρόπους στο συνολικό αποτέλεσμα των συνεδριών. Στις ακόλουθες ερωτήσεις σας ζητείται να διευκρινίσετε κατά πόσο μια πτυχή συνέβαλε στο συνολικό αποτέλεσμα. Μπορείτε να το κάνετε αυτό βαθμολογώντας κάθε στοιχείο/πτυχή σε μια κλίμακα από -5 έως +5, στην οποία:

-5 = δεν είχε καμιά χρησιμότητα, εμπόδισε τις συνεδρίες.
0 = δεν εμπόδισε, αλλά δεν ήταν καθόλου χρήσιμη.
+5 = συνέβαλε πολύ.

	score -5 to +5
1. Το γεγονός ότι το μοντέλο προβάλλεται / καταγράφεται με τρόπο ορατό υς.	
2. Το γεγονός ότι ένα άτομο εξω απο την οργάνωση λειτούργησε :υκολυντής ομάδας».	
3. Η ευκαιρία για ανοιχτή και εκτενή συζήτηση επι του προβλήματος.	
4. Η χρήση του μοντέλου.	
5. Γραπτές αναφορές (με ερωτήσεις) μεταξύ των συνεδριών.	
6. Συγκέντρωση των δεδομένων που απαιτούνται για το ποσοτικό μοντέλο.	
7. Ανάλυση των δεδομένων.	
8. Προσομοίωση, χρησιμοποιώντας το ποσοτικό μοντέλο.	
9. Άλλα, ...	

Ποιότητα των συνεδριών μοντελοποίησης

Οι ακόλουθες ερωτήσεις έχουν ως στόχο την αξιολόγηση της ποιότητας της διαδικασίας μοντελοποίησης. Με τη λέξη 'πρόβλημα' αναφερόμαστε και πάλι στον ορισμό του προβλήματος που χρησιμοποιήθηκε στη διαδικασία μοντελοποίησης: **τη διερεύνηση των μηχανισμών ποιότητας ενός νοσοκομείου.**

	sa 5	a 4	a/	d	sd
1. Η παρούσα κατάσταση της οργάνωσής μου χαρτογραφήθηκε κα					

2. Η περιγραφή της επιθυμητής κατάστασης που πρέπει να επιτευ ν σωστή.					
3. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκε ο σωστός ορισ προβλήματος.					
4. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκαν όλες οι σχετ ροφορίες.					
5. Η ανάλυση των πληροφοριών ήταν σωστή.					
6. Όλα τα ζητήματα ή οι προβληματικοί τομείς που έχριζαν προσο ευνήθηκαν.					
7. Στη διαδικασία μοντελοποίησης δεν συζητήθηκαν όλες οι χρήσ εων.					
8. Στη διαδικασία μοντελοποίησης επεξεργασθήκαμε ονεκτήματα και τα μειονεκτήματα των πιθανών λύσεων.					
9. Η επιλογή της πιο ελπιδοφόρας λύσης(εων) βασίστηκε σε ειρήματα.					
10. Στη διαδικασία μοντελοποίησης επιλέχθηκε η καλύτερη λύση(ε					

Προτάσεις για μελλοντικές συνεδρίες

Οι ακόλουθες ερωτήσεις μπορεί να είναι πολύ χρήσιμες για τον προγραμματισμό των μελλοντικών συνεδριών μοντελοποίησης.

Ποια ήταν τα τρία καλύτερα χαρακτηριστικά των συνεδριών;

a) _____

_____

b) _____

_____

c) _____

_____

Ποια ήταν τα τρία πιο απογοητευτικά χαρακτηριστικά ή προβλήματα των συνεδριών;

a) _____

_____

b) _____

_____

c) _____

_____

Ποιες συγκεκριμένες προτάσεις θα κάνατε αν οργανωθούν ή επαναληφθούν συνεδρίες όπως αυτές;

a) _____

_____

b) _____

_____

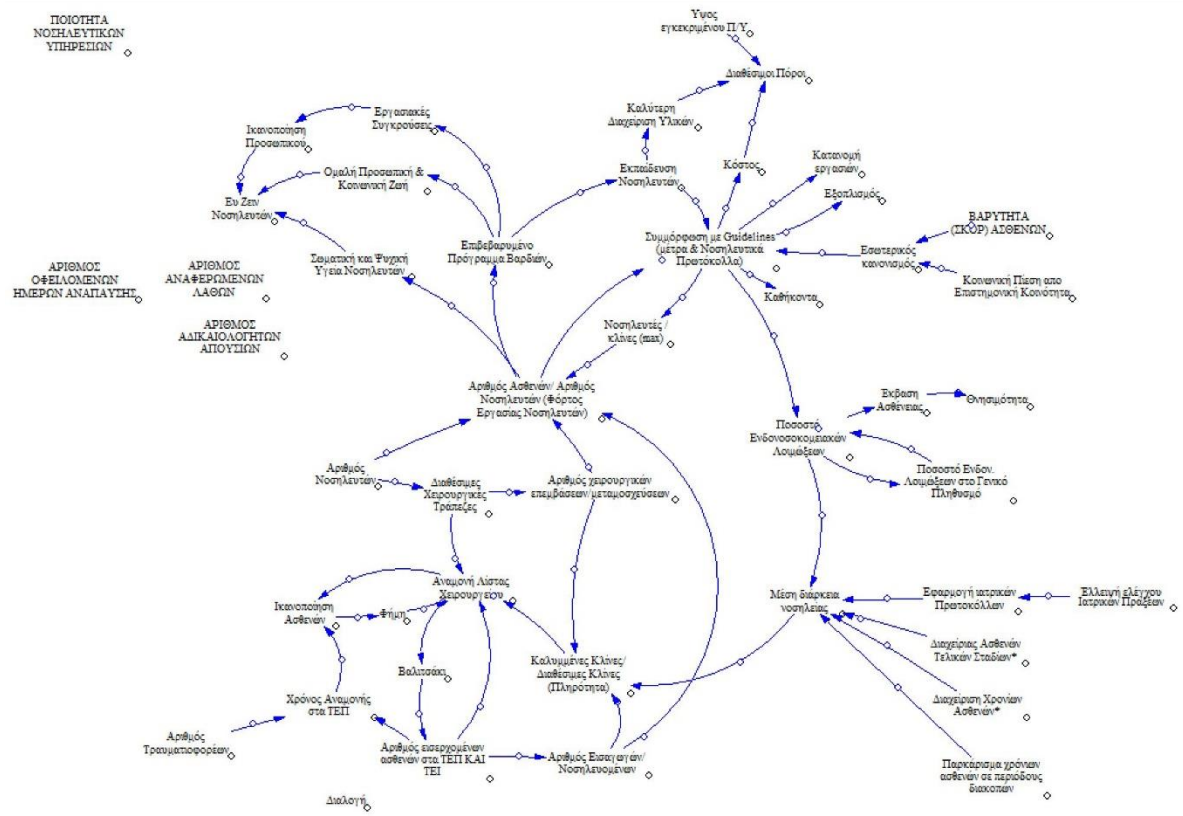
c) _____

_____

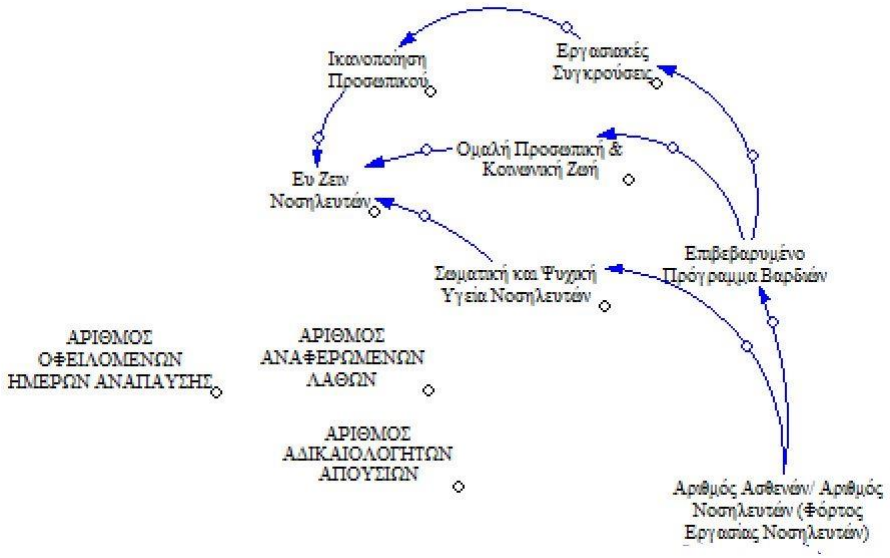
Σας ευχαριστώ και πάλι θερμά για τη συνεργασία σας.

Appendix 15: Participants' Workbook

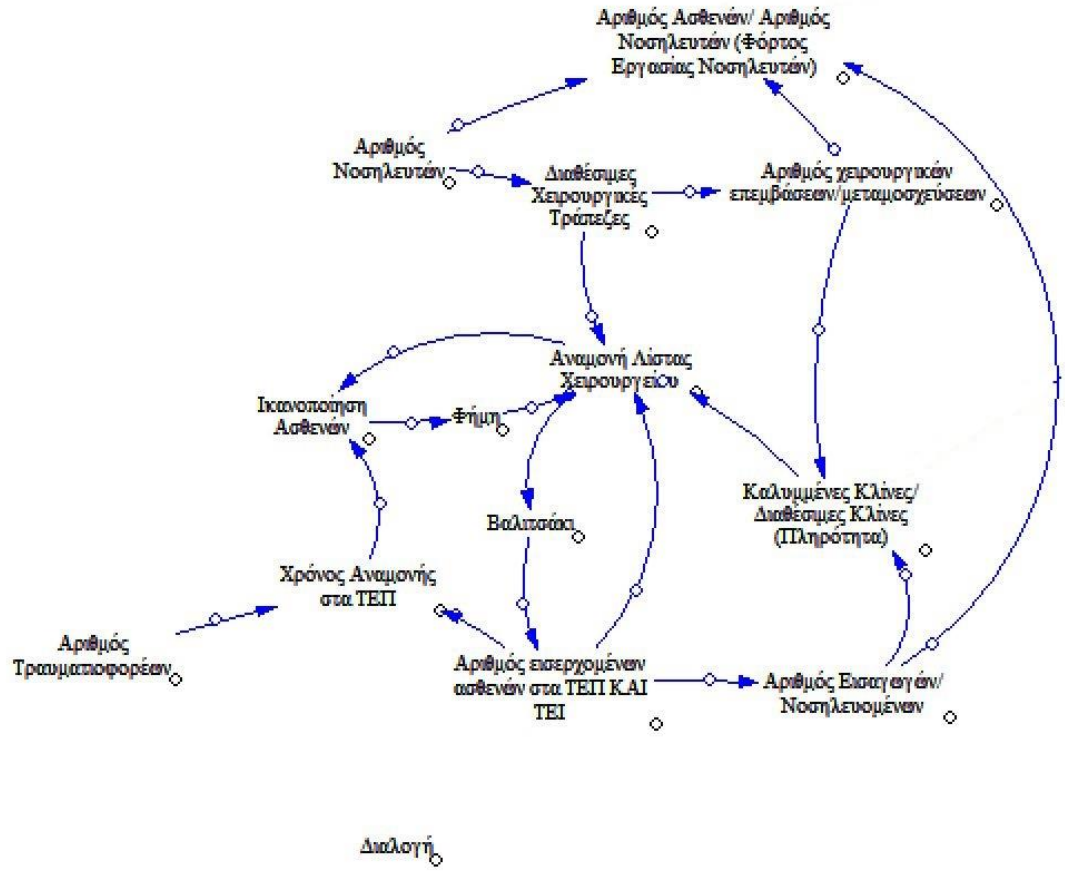
ΤΟ ΜΟΝΤΕΛΟ


ΠΟΙΟΤΗΤΑ ΝΟΣΗΛΕΥΤΙΚΩΝ ΥΠΗΡΕΣΙΩΝ
Υψος εγκεκριμένου Π/Υ
Διαθέσιμοι Πόροι
Καλύτερη Διαχείριση Υλικών
Κόστος
Κατανομή εργασιών
Εξοπλισμός
Εκπαίδευση Νοσηλευτών
Συμμόρφωση με Guidelines (μέτρα & Νοσηλευτικά Πρωτόκολλα)
Καθήκοντα
ΒΑΡΥΤΗΤΑ (ΣΚΩΡ) ΑΣΘΕΝΩΝ
Εσωτερικός κανονισμός
Κοινωνική Πίεση απο Επιστημονική Κοινότητα
Εργασιακές Συγκρούσεις
Ικανοποίηση Προσωπικού
Ομαλή Προσωπική & Κοινωνική Ζωή
Ευ Ζειν Νοσηλευτών
Σωματική και Ψυχική Υγεία Νοσηλευτών
Επιβεβαρυμένο Πρόγραμμα Βαρδιών
ΑΡΙΘΜΟΣ ΟΦΕΙΛΟΜΕΝΩΝ ΗΜΕΡΩΝ ΑΝΑΠΑΥΣΗΣ
ΑΡΙΘΜΟΣ ΑΝΑΦΕΡΟΜΕΝΩΝ ΛΑΘΩΝ
ΑΡΙΘΜΟΣ ΑΔΙΚΑΙΟΛΟΓΗΤΩΝ ΑΠΟΥΣΙΩΝ
Νοσηλευτές / κλίνες (max)
Αριθμός Ασθενών/ Αριθμός Νοσηλευτών (Φόρτος Εργασιας Νοσηλευτων)
Εκβαση Ασθενειας
Θνησιμότητα
Ποσοστό Ενδονοσοκομειακών Λοιμώξεων
Ποσοστό Ενδον. Λοιμώξεων στο Γενικό Πληθυσμο
Αριθμός Νοσηλευτων
Διαθέσιμες Χειρουργικές Τραπεζες
Αριθμός χειρουργικών επεμβάσεων/ μεταμοσχεύσεων
Αναμονή Λίστας Χειρουργειου
Ικανοποίηση Ασθενων
Φήμη
Βαλιτσάκι
Καλυμμένες Κλίνες/ Διαθέσιμες Κλίνες (Πληροτητα)
Χρόνος Αναμονής στα ΤΕΠ
Αριθμός Τραυματιοφορέων
Αριθμός εισερχομένων ασθενων στα ΤΕΠ ΚΑΙ ΤΕΙ
Αριθμός Εισαγωγών/ Νοσηλευομένων
Διαλογή
Μέση διαρκεια νοσηλειας
Εφαρμογή ιατρικών Πρωτοκόλλων
Ελλειψη ελέγχου Ιατρικών Πράξεων
Διαχείριση Ασθενών Τελικών Σταδίων*
Διαχείριση Χρονίων Ασθενών*
Παρκαρισμα χρόνιων ασθενων σε περιοδους διακοπων

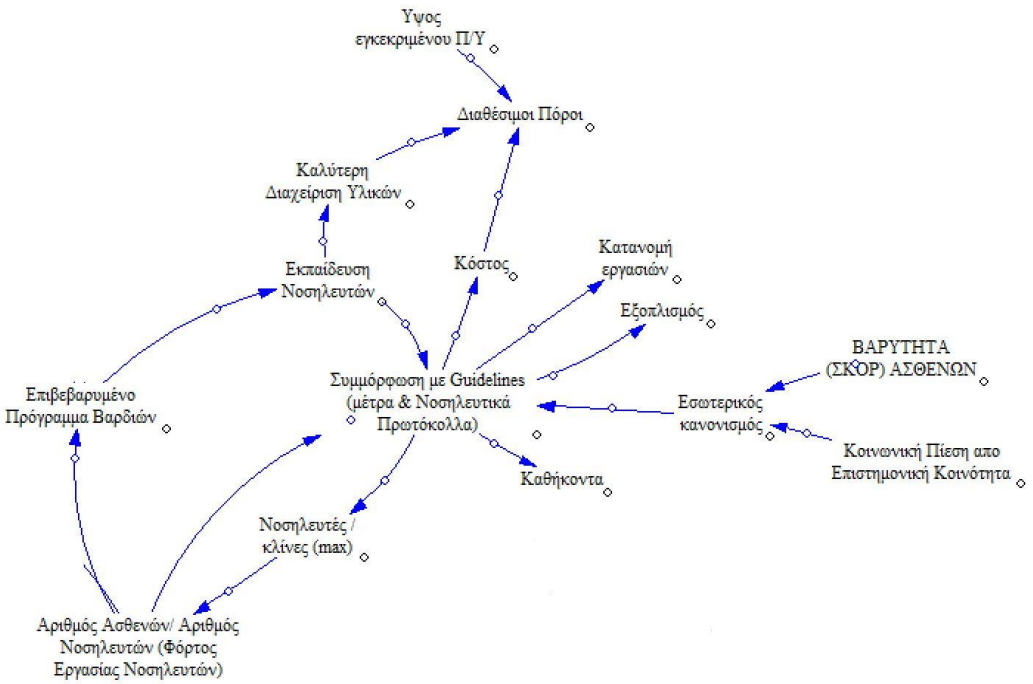
ΙΚΑΝΟΠΟΙΗΣΗ ΝΟΣΗΛΕΥΤΩΝ



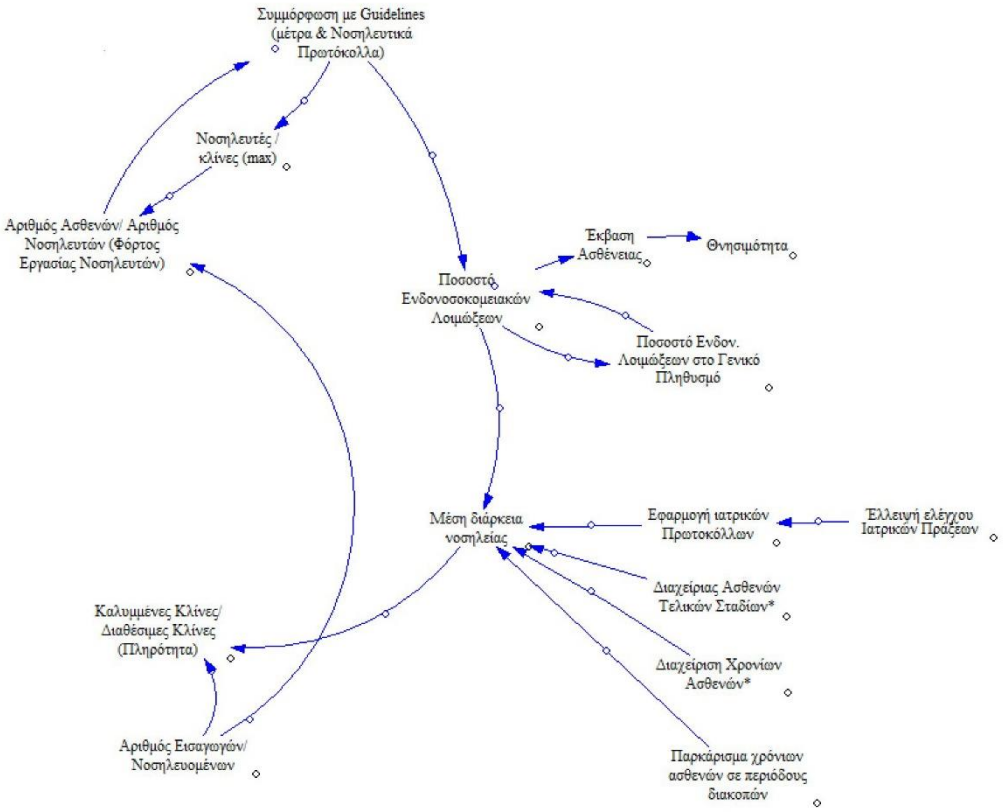
ΕΙΣΑΓΩΓΗ ΑΣΘΕΝΩΝ



GUIDELINES



ΠΛΗΡΟΤΗΤΑ ΚΑΙ ΜΔΝ



Appendix 16: Internal Documents Analyzed – Objectives set by the Nursing Division

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ ΥΓΕΙΑΣ
& ΚΟΙΝΩΝΙΚΗΣ ΑΛΛΗΛΕΓΓΥΗΣ
1η ΥΠΕ ΑΤΤΙΚΗΣ
ΓΕΝΙΚΟ ΝΟΣΟΚΟΜΕΙΟ
ΑΘΗΝΩΝ
«ΛΑΙΚΟ»
ΔΙΕΥΘΥΝΣΗ: ΑΓ. ΘΩΜΑ 17 - ΓΟΥΔΗ (Τ.Κ 115 27)
ΓΡΑΦΕΙΟ: Διεύθυνση Νοσηλευτικής Υπηρεσίας
ΤΗΛΕΦΩΝΟ: 2132061024 Fax: 2132061765
e-mail: nos@laiko.gr

Ημερομηνία: 01/11/2019

Αρ. Πρωτ.

ΠΡΟΣ: Το Διοικητή του ΓΝΑ ΛΑΪΚΟ
Την Αναπλ. Διοικήτρια του ΓΝΑ ΛΑΪΚΟ

ΘΕΜΑ: «Εφαρμογή Συστήματος Διοίκησης μέσω Στόχων, της Διεύθυνσης Νοσηλευτικής Υπηρεσίας του ΓΝΑ ΛΑΪΚΟ, για τα έτη 2019-2020»

Σε απάντηση στο υπ. αριθμ. πρωτ. Διοικ. 621/20-09-2019 έγγραφό σας, σχετικά με την εφαρμογή Συστήματος Διοίκησης μέσω στόχων στον τομέα ευθύνης μας, σας ενημερώνουμε ότι για τα έτη 2019-2020, ο γενικότερος προγραμματισμός των δράσεων είναι ο εξής:

ΕΝΤΥΠΟ ΕΠΙΜΕΡΙΣΜΟΥ ΣΤΟΧΟΘΕΣΙΑΣ ΣΤΑ ΕΠΙΠΕΔΑ ΙΕΡΑΡΧΙΑΣ			
Φορέας: ΓΝΑ «ΛΑΪΚΟ»			
Κωδικός Αριθμός Στόχου	**Άξονες Στοχοθεσίας**	**Υπεύθυνος Υλοποίησης**	**Χρονοδιάγραμμα Υλοποίησης**
1	Διασφάλιση δικαιώματος των πολιτών/ασθενών για καθολική και ισότιμη πρόσβαση στο Νοσοκομείο	Διεύθυνση Νοσηλευτικής Υπηρεσίας	Θα οριστικοποιηθεί μετά από συμφωνία με τους εμπλεκόμενους
2	Βελτίωση της ποιότητας των παρεχόμενων υπηρεσιών με σχεδιασμό υπηρεσιών, που ενισχύουν και διασφαλίζουν τεκμηριωμένα την ασφάλεια των πολιτών/ασθενών και των εργαζομένων	Διεύθυνση Νοσηλευτικής Υπηρεσίας	Θα οριστικοποιηθεί μετά από συμφωνία με τους εμπλεκόμενους
2.1	Προτυποποίηση των Νοσηλευτικών Εντύπων των Νοσηλευτικών Τμημάτων /Μονάδων	Διεύθυνση Νοσηλευτικής Υπηρεσίας-Υποδιευθύνσεις Νοσηλευτικής Υπηρεσίας-Τμήμα ελέγχου Ποιότητας, Έρευνας & Συνεχιζόμενης Εκπαίδευσης	2019-2020
2.2	Προτυποποίηση Κλινικών διαδικασιών	Διεύθυνση Νοσηλευτικής Υπηρεσίας-Υποδιευθύνσεις Νοσηλευτικής Υπηρεσίας-Τμήμα Ελέγχου Ποιότητας,	2019-2020

		Έρευνας & Συνεχιζόμενης Εκπαίδευσης	
2.3	Οργάνωση και υλοποίηση εκπαιδευτικών προγραμμάτων στο πλαίσιο ανάπτυξης προσωπικού	Διεύθυνση Νοσηλευτικής Υπηρεσίας-Υποδιευθύνσεις Νοσηλευτικής Υπηρεσίας-Τμήμα Ελέγχου Ποιότητας, Έρευνας & Συνεχιζόμενης Εκπαίδευσης-Επιτροπή Ελέγχου Λοιμώξεων-Υπεύθυνη Διαχείρισης Αποβλήτων	2019-2020
2.4	Αύξηση του ποσοστού εμβολιαστικής κάλυψης του νοσηλευτικού προσωπικού από 45% σε 50%	Διεύθυνση Νοσηλευτικής Υπηρεσίας-Υποδιευθύνσεις Νοσηλευτικής Υπηρεσίας-Επιτροπή Ελέγχου Λοιμώξεων	2019-2020
2.5	Αύξηση της ικανοποίησης εσωτερικών και εξωτερικών ασθενών του Νοσοκομείου	Διεύθυνση Νοσηλευτικής Υπηρεσίας-Υποδιευθύνσεις Νοσηλευτικής Υπηρεσίας-Τμήμα Ελέγχου Ποιότητας, Έρευνας & Συνεχιζόμενης Εκπαίδευσης-Γραφείο Προστασίας Δικαιωμάτων Ληπτών Υπηρεσιών Υγείας	2019-2020
3	Διασφάλιση της βιωσιμότητας των παρεχόμενων υπηρεσιών με συστηματική παρακολούθηση των βασικών πτυχών δραστηριότητας: χρηματοοικονομική, ανθρωποκεντρική, εσωτερικές διαδικασίες, ανάπτυξη και μάθηση. Συστηματικός έλεγχος για εξάλειψη της προκλητής ζήτησης, της σπατάλης και της διαφθοράς στο Σύστημα Υγείας	Διεύθυνση Νοσηλευτικής Υπηρεσίας	Θα οριστικοποιηθεί μετά από συμφωνία με τους εμπλεκόμενους
3.1	Εφαρμογή Πληροφοριακού Συστήματος στη Διατμηματική Επικοινωνία	Διεύθυνση Νοσηλευτικής Υπηρεσίας-Υποδιευθύνσεις Νοσηλευτικής Υπηρεσίας	2019-2020

Οι άξονες παρέμβασης της Διεύθυνσης Νοσηλευτικής Υπηρεσίας, με χρονική δέσμευση υλοποίησης στις 31/12/2020, περιλαμβάνουν ως προς τους Στρατηγικούς Στόχους 2 και 3 τις παρακάτω δράσεις:

2.1 Προτυποποίηση των νοσηλευτικών εντύπων των νοσηλευτικών Τμημάτων/Μονάδων.

Οι στόχοι -δράσεις θα προσανατολίζονται στην απλούστευση των διαδικασιών και τον εκσυγχρονισμό της διαχείρισης των νοσηλευτικών πληροφοριών, με βασικό κριτήριο τη διασφάλιση της ποιότητας. Τα νοσηλευτικά έντυπα αφορούν στην ενδοτμηματική επικοινωνία (νοσηλευτικό ιστορικό, νοσηλευτική λογοδοσία ασθενούς, λογοδοσία τμήματος, κάρτα νοσηλείας, πρόγραμμα εργασίας , φύλλο ιατρικών οδηγιών κ.λπ.),τη διατμηματική επικοινωνία αλλά και την επικοινωνία του τμήματος με τις άλλες υπηρεσίες του Νοσοκομείου (τεχνική, διοικητική, ιατρική)

Είδος δαπάνης: Απαιτούνται οικονομικοί πόροι μετά την οριστικοποίηση και έγκριση για ενιαία ή κατά μέρος εφαρμογή, που αφορά την προμήθεια των εντύπων ή την αγορά προγράμματος για την ηλεκτρονική εφαρμογή κάποιων εξ αυτών.

2.2 Προτυποποίηση κλινικών διαδικασιών (πρωτοκόλλων-σχεδίων φροντίδας οδηγιών εργασίας) στα πλαίσια της τεκμηριωμένης πρακτικής στην καθημερινή νοσηλευτική φροντίδα.

Η χρήση των παραπάνω «εργαλείων» στην φροντίδα των ασθενών είναι σημαντική στην αποτελεσματική και ασφαλή κλινική πρακτική, στη μείωση των ενδονοσοκομειακών λοιμώξεων, στη μείωση του κόστους, στον έλεγχο, την παρακολούθηση και αξιολόγηση της εργασίας των επαγγελματιών υγείας, καθώς και στην αύξηση της εμπιστοσύνης των ασθενών, κατά την παροχή νοσηλευτικών υπηρεσιών.

Είδος δαπάνης: Απαιτούνται πέραν από την εθελοντική εργασία και εργατοώρες για την ανάπτυξη των διαδικασιών, οι οποίες θα πρέπει να καλυφθούν οικονομικά.

2.3 Οργάνωση και υλοποίηση εκπαιδευτικών προγραμμάτων στα πλαίσια της ανάπτυξης του νοσηλευτικού προσωπικού.

Η προώθηση της συνεχιζόμενης εκπαίδευσης συνιστά επιτακτική ανάγκη και συντελεί στην παροχή υψηλού επιπέδου νοσηλευτικής φροντίδας βασισμένης στην τεκμηριωμένη νοσηλευτική πρακτική. Η συνεχιζόμενη εκπαίδευση και η επιμόρφωση θα συμβάλλουν ουσιαστικά στην εφαρμογή των κλινικών κατευθυντηρίων οδηγιών και πρωτοκόλλων.

Είδος δαπάνης: Απαιτούνται οικονομικοί πόροι για συγκεκριμένα εκπαιδευτικά προγράμματα, όπως αυτά θα οριστούν από τη Νοσηλευτική Διεύθυνση, πέραν των προγραμμάτων που σχεδιάζονται και υλοποιούνται από το Αυτοτελές Τμήμα Ελέγχου Ποιότητας, Έρευνας και Συνεχιζόμενης Εκπαίδευσης .

2.4 Αύξηση του ποσοστού εμβολιαστικής κάλυψης του νοσηλευτικού προσωπικού από 45% σε 50%.

Η εμβολιαστική κάλυψη του νοσηλευτικού προσωπικού, κυρίως σε ότι αφορά το εμβόλιο της γρίπης, αποτελεί προτεραιότητα για το Νοσοκομείο και βασική γραμμή άμυνας απέναντι στην αντιμετώπιση της εξάπλωσης του ιού. Διασφαλίζεται έτσι η παροχή νοσηλευτικής φροντίδας στους ασθενείς με τρόπο ασφαλή, τόσο για τους ίδιους, όσο και για το προσωπικό που έρχεται σε καθημερινή επαφή μαζί τους.

Είδος δαπάνης: Απαιτούνται οικονομικοί πόροι για την αγορά των εμβολίων.

2.5 Αύξηση της ικανοποίησης εσωτερικών και εξωτερικών ασθενών του Νοσοκομείου

Η μέτρηση της ικανοποίησης των εσωτερικών και εξωτερικών ασθενών αποτελούν βασική μέριμνα του Νοσοκομείου. Πραγματοποιείται με τη διανομή και συλλογή ερωτηματολογίων προς τους ασθενείς, από το Γραφείο Προστασίας Δικαιωμάτων Ληπτών Υπηρεσιών Υγείας, καθώς και τη στατιστική επεξεργασία των δεδομένων από το Αυτοτελές Τμήμα Ελέγχου Ποιότητας, Έρευνας και Συνεχιζόμενης Εκπαίδευσης .

Είδος δαπάνης: Απαιτούνται οικονομικοί πόροι για την προμήθεια του έντυπου υλικού (ερωτηματολόγια), καθώς και την αγορά πληροφοριακού, στατιστικού προγράμματος για τη στατιστική επεξεργασία και ηλεκτρονική αποθήκευση των δεδομένων.

3.1 Εφαρμογή Πληροφοριακού συστήματος στην διατμηματική επικοινωνία εντός της υπηρεσίας και μεταξύ των άλλων υπηρεσιών στα πλαίσια της γρήγορης διακίνησης των πληροφοριών, της μείωσης της έντυπης χρήσης επικοινωνίας που θα οδηγήσει στην εξοικονόμηση πόρων.

Είδος δαπάνης: Απαιτείται υποστήριξη από το Τμήμα Οργάνωσης και Πληροφορικής που θα περιλαμβάνει την εκπαίδευση των χρηστών για την ορθή και ασφαλή χρήση του πληροφοριακού συστήματος, καθώς επίσης και τον εκσυγχρονισμό του εξοπλισμού σε όλα τα νοσηλευτικά τμήματα και μονάδες.

Η ΠΡΟΪΣΤΑΜΕΝΗ ΔΙΕΥΘΥΝΣΗΣ
ΝΟΣΗΛΕΥΤΙΚΗΣ ΥΠΗΡΕΣΙΑΣ

ΔΗΜΗΤΡΑ ΚΑΛΟΓΡΑΝΑ

Κοινοποίηση:

- Διευθυντή Ιατρικής Υπηρεσίας
- Διευθύντρια Διοικητικής Υπηρεσίας
- Αυτοτελές Τμήμα Ελέγχου Ποιότητας, Έρευνας και Συνεχιζόμενης Εκπαίδευσης

Appendix 17: Internal Documents Analyzed – Objectives set by the Financial/Administrative Division

Τμ. Ποιότητας

Γ.Ν.Α. "ΛΑΪΚΟ"
ΑΡ.ΠΡ. 16336
11/11/2019 ΕΙΣ

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ ΥΓΕΙΑΣ & ΚΟΙΝ. ΑΛΛΗΛΕΓΓΥΗΣ
1η .Υ.ΠΕ. ΑΤΤΙΚΗΣ
ΓΕΝΙΚΟ ΝΟΣΟΚΟΜΕΙΟ ΑΘΗΝΩΝ
«ΛΑΪΚΟ»
ΓΡΑΦΕΙΟ: Προϊσταμένης Διοικητικής υπηρεσίας
ΠΛΗΡΟΦΟΡΙΕΣ: Νικολάου Ιωάννα
ΤΗΛΕΦΩΝΟ: 2132061013

Διοικητή
Αν. Διοικητρια
Υπηρεσιών Διοικ/κων
Υποδ/νσεων Διοικ/κου Υπηρ.

11/11/19

Προς την Διοίκηση
του Νοσ/μείου
Ενταύθα

Θέμα : Εφαρμογή Συστήματος Διοίκησης μέσω στόχων της Διεύθυνσης της Διοικητικής Υπηρεσίας του Νοσοκομείου έτους 2020.

Σχετ. : το υπ' αριθ. πρωτ. 621/20-9-2019 έγγραφό σας.

Σε απάντηση του ανωτέρου σχετικού εγγράφου σας, με το οποίο ζητάτε την στοχοθεσία της διοικητικής υπηρεσίας για το έτος 2020, στο πλαίσιο της εφαρμογής της Διοίκησης μέσω στόχων, σας γνωρίζουμε ότι η υπηρεσία προγραμματίζει τις παρακάτω εφαρμογές.:

Κωδικός Αριθμός Στόχου	Άξονες Στοχοθεσίας	Υπεύθυνος Υλοποίησης	Χρονοδιάγραμμα Υλοποίησης
1.	Ψηφιακή Διακίνηση εγγράφων και Ψηφιακή Υπογραφή	Διεύθ. Διοικ. Υπηρ. Υποδ. Διοικ. Τμ. Γραμμ.	Εντός του 2020
2.	Ενημέρωση και επιμόρφωση υπαλλήλων σχετικά με τον νέο κανονισμό **GDPR**	Διεύθυνση Υποδ/νση Οικ/κού Υποδ/νση Διοικ/κού Τμ. Πληροφορικής	Εντός του 2020

1

Αναλυτικότερα τα εξής.:

1.1 Η ψηφιακή υπογραφή και η ηλεκτρονική διαχείρηση των εγγράφων υποστηρίζεται ότι βοηθά στην μείωση του κόστους λειτουργίας και στην ενίσχυση της αποτελεσματικότητας, μειώνοντας τις γραφειοκρατικές δομές και τις ανθρωποώρες εργασίας, ενώ ενισχύει την διαφάνεια.

Η εφαρμογή της κινείται σε δύο παραμέτρους.:

α) την οικονομική παράμετρο (χάσιμο ανθρωποωρών, κόστος χαρτιού κ.λ.π.)
β) την Διοικητική παράμετρο (μείωση της διοικητικής χρονικής καθυστέρησης λόγω ύπαρξης χρονοσήμανσης.)

Είναι μία ενδεδειγμένη μέθοδος για την καλύτερη λειτουργία των δημοσίων υπηρεσιών η οποία διασφαλίζει ταχύτητα – διαφάνεια - αποτελεσματικότητα -μείωση κόστους.

Είδος δαπάνης:
Πέραν της εθελοντικής εργασίας των υπαλλήλων για την εφαρμογή, θα προκληθεί και κόστος για την αμοιβή υποστηρικτικής εταιρείας.

2.1 Οι υπάλληλοι της Διοικητικής υπηρεσίας κατά την εκτέλεση των καθηκόντων τους, επεξεργάζονται μεγάλο όγκο προσωπικών δεδομένων είτε ασθενών, είτε υπαλλήλων είτε προμηθευτών και θα πρέπει οπωσδήποτε να λειτουργούν σύμφωνα με τον νέο κανονισμό προστασίας προσωπικών δεδομένων, προκειμένου να αποφύγουμε την επιβολή προστίμου, λόγω μη συμμόρφωσης.

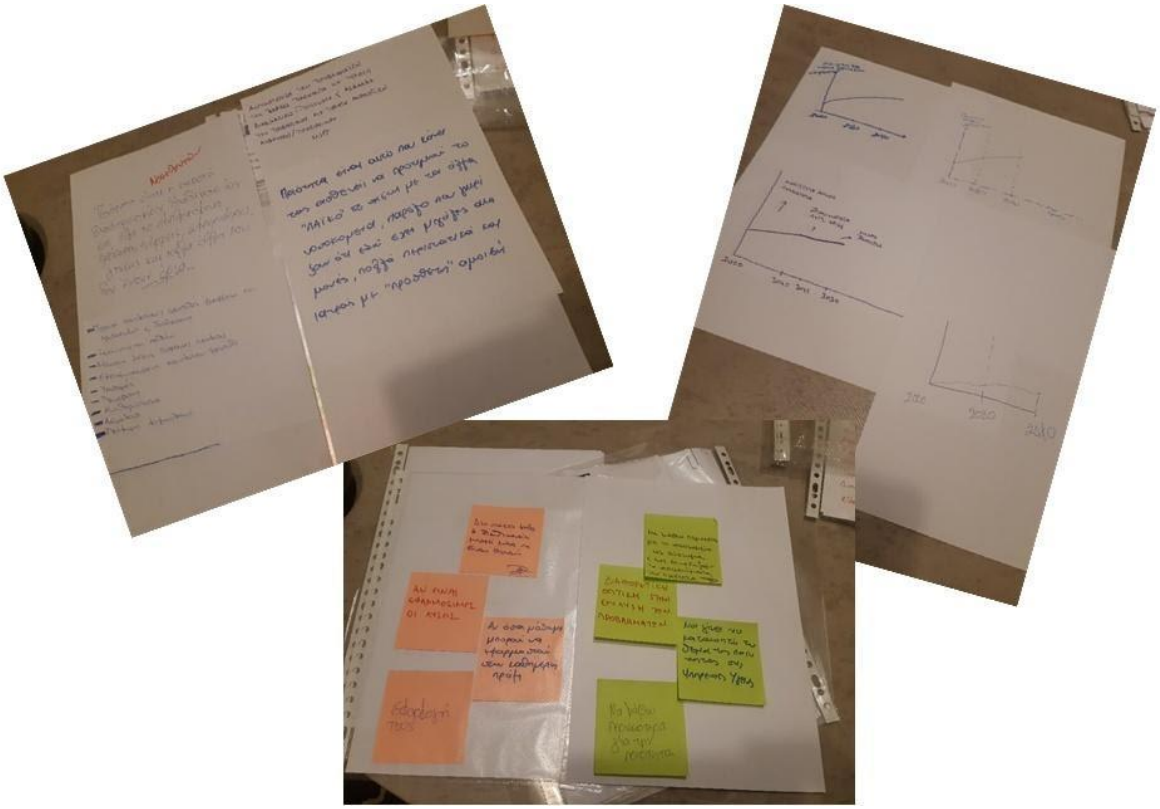
Είδος δαπάνης:
Πλην των ανθρωποωρών που θα καταναλωθούν από το προσωπικό, θα απαιτηθούν και έξοδα για την επιμόρφωσή του, τα οποία θα είναι σημαντικά μικρότερα της επιβολής προστίμου.

Η Προϊσταμένη Δ/νσης
Διοικητικής Υπηρεσίας
Νικολάου Ιωάννα

Εσωτερική Διανομή

1. Προϊστ. Υποδ/νσης Διοικ/κού
2. Προϊστ. Υποδ/νσης Οικ/κού

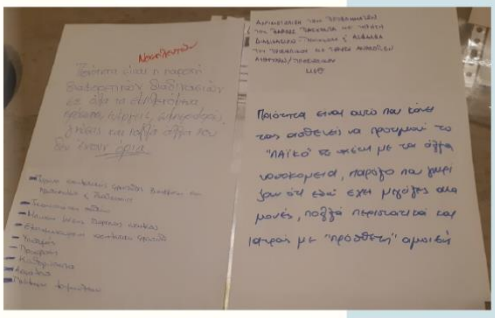
Appendix 18: Participants' Shared Definition of Hospital Performance



ΣΥΝΟΨΗ ΠΡΟΒΛΗΜΑΤΟΣ

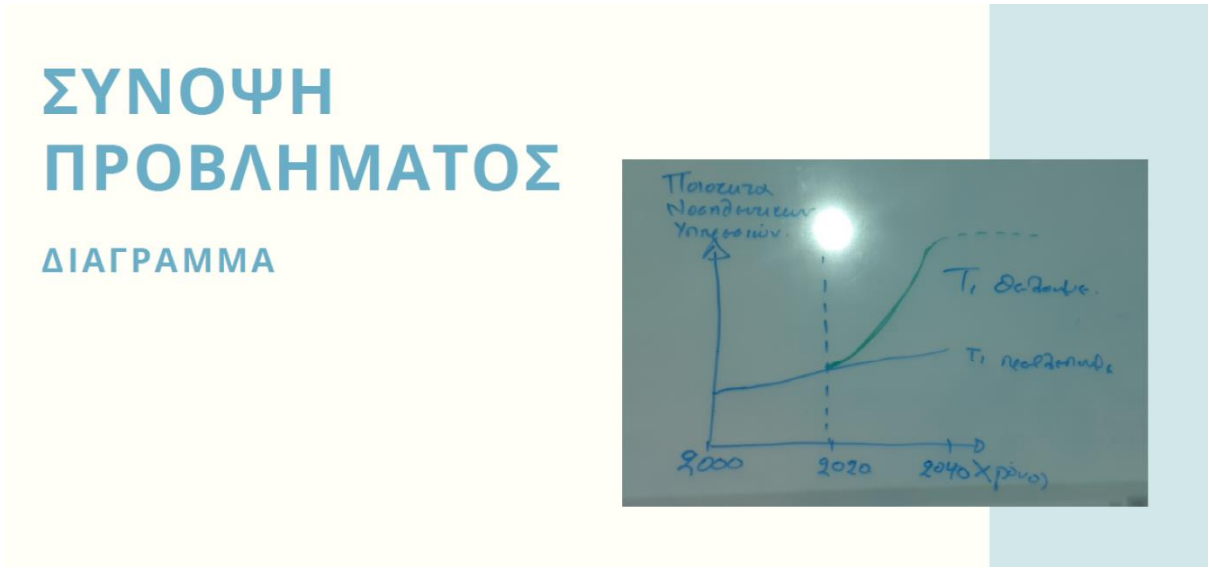
ΟΡΙΣΜΟΣ

Ποιότητα Νοσηλευτικών Υπηρεσιών είναι η παροχή εξατομικευμένης φροντίδας υγείας προς τον ασθενή, με:
- ασφάλεια (για τον ασθενή και για το προσωπικό)
- υπευθυνότητα (τήρηση πρωτοκόλλων, αναλογιών και διαδικασιών)
- **αξιοπρέπεια** (καλές υποδομές, πρόσβαση χωρίς αναμονές και "πρόσθετες" αμοιβές, καθαριότητα)



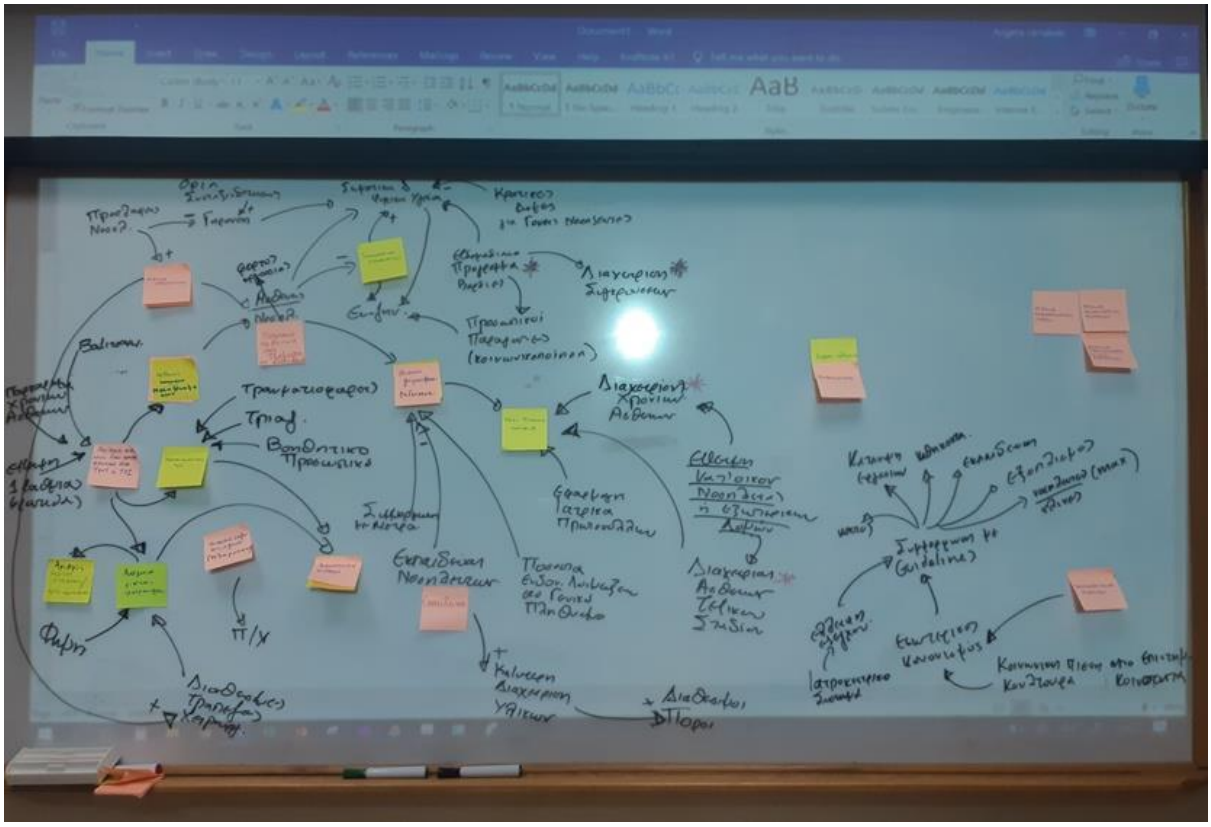
Appendix 19: Reference Mode of the Case Hospital Performance

The Reference Mode created and agreed upon by the participants showed that, despite the counterintuitive negative outcomes documented, the level of the overall performance in the case hospital has been slightly increasing after the healthcare reform and is now stabilizing. Overall, it seems that during the last decade and despite the austerity measures, participants feel that the level of hospital performance remains stable and there was even a slight increase. One of the reasons mentioned for this was that there started to be controls and performance measurements by the ministry during the last decade, that there was not before. However, participants feel that it is difficult to keep increasing further the performance, given the measures and the performance management policies implied. For the future, their prediction is that it will either stagnate at this level or improve slightly. Thus, the hoped scenario showed a gradual growth of the hospital performance during the next decade, while the feared scenario represented the expectations by the participants of a less significant growth or a stagnation of the hospital performance during the years to come, a trend that is already ongoing during the years after the Healthcare Reform according to the participants.



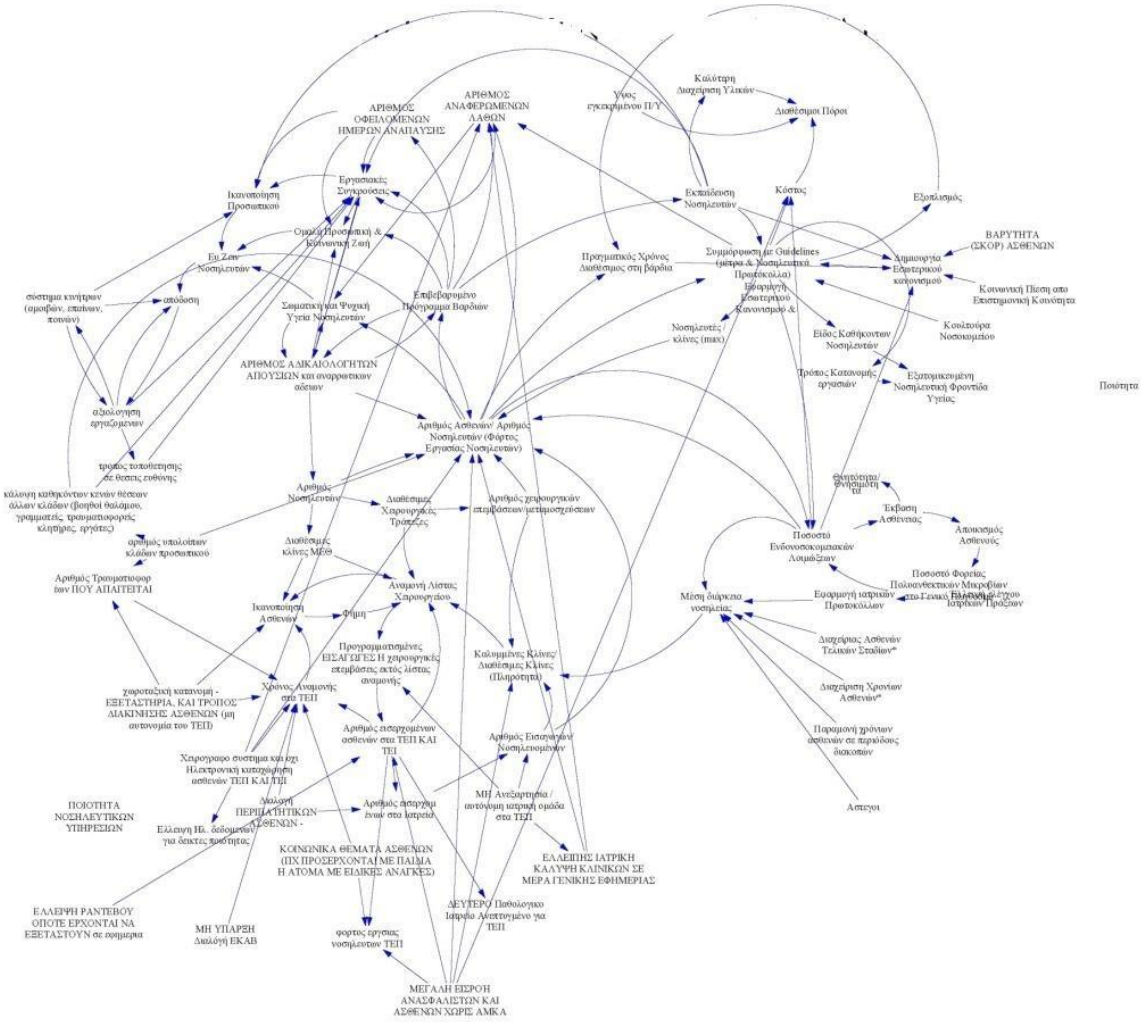
Appendix 20: Scoping Model of Hospital Performance (Divergent CLD version)

At the initial stages of the first GMB sessions, participants started modeling on the board, using posted papers.



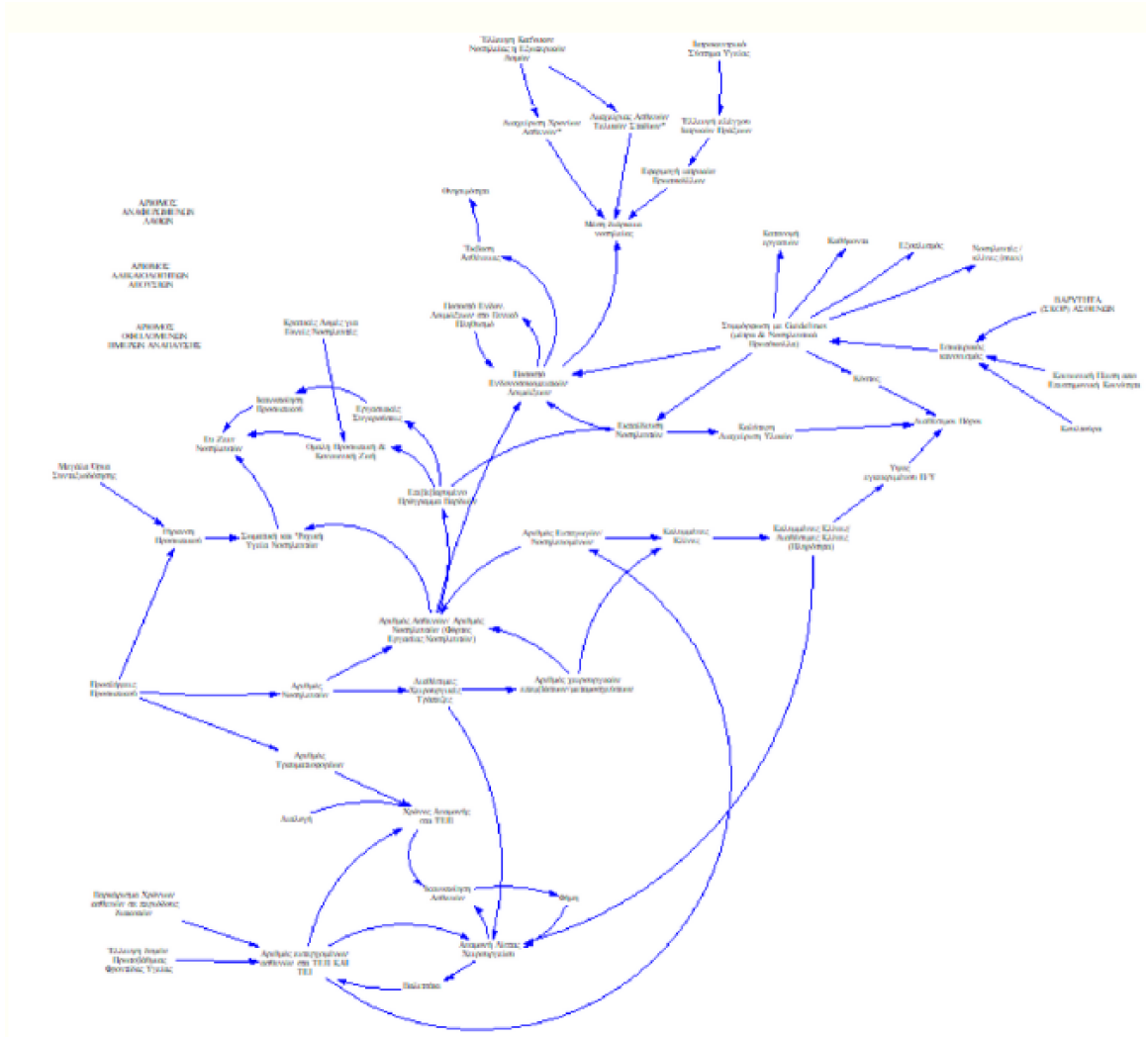
The *Scoping Model of Hospital Performance* is a rather extended and divergent version of the system at hand, combining all aspects and views and including all the variables and links that all the participants came up with and agreed upon. This model is usually too big to analyse and get some useful and meaningful insights from. For this reason, some "convergence" is necessary in order to make the model smaller, more meaningful and more comprehensive, and in order to set the scope of the research and the boundaries of the system at hand. The *Scoping Model of Hospital Performance* was digitised by the researcher in Vensim Software (background modelling during the GMB sessions).

Scoping Model of Hospital Performance (Divergent version)



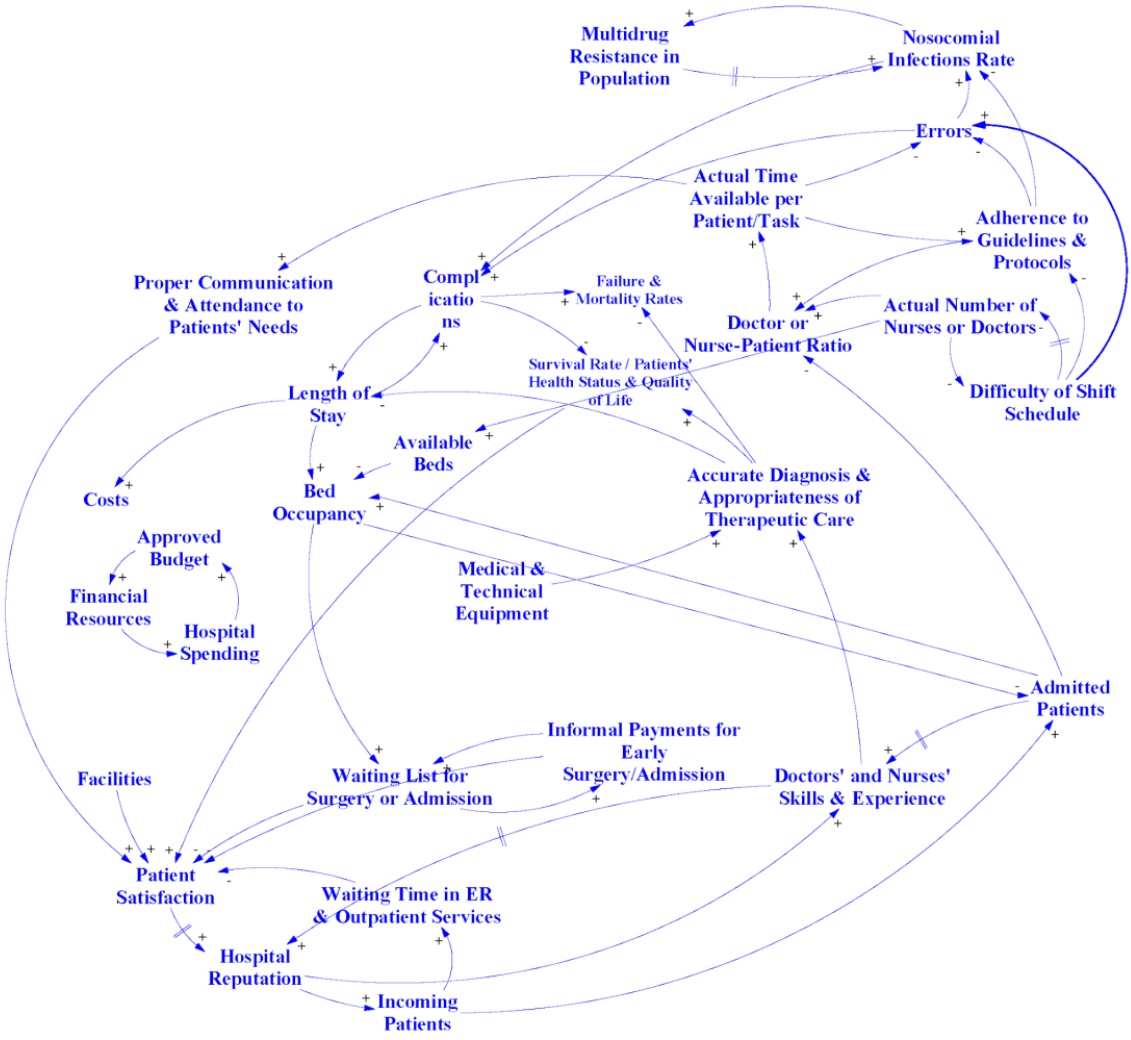
After the break, the convergent part of the GMB session started, with the facilitator moving to exercises and scripts where participants should think of which variables are less important or less relevant than others; which variables are implied by others and could be omitted without changing the "meaning" of the model, etc. This was the last exercise of the first GMB session, which was completed with a minimised version of the scoping model. This version of the model was calibrated by the researcher in Vensim Software (background modelling in between the GMB sessions), and was presented to the participants at the beginning of the second GMB session.

Scoping Model of Hospital Performance (Convergent version)



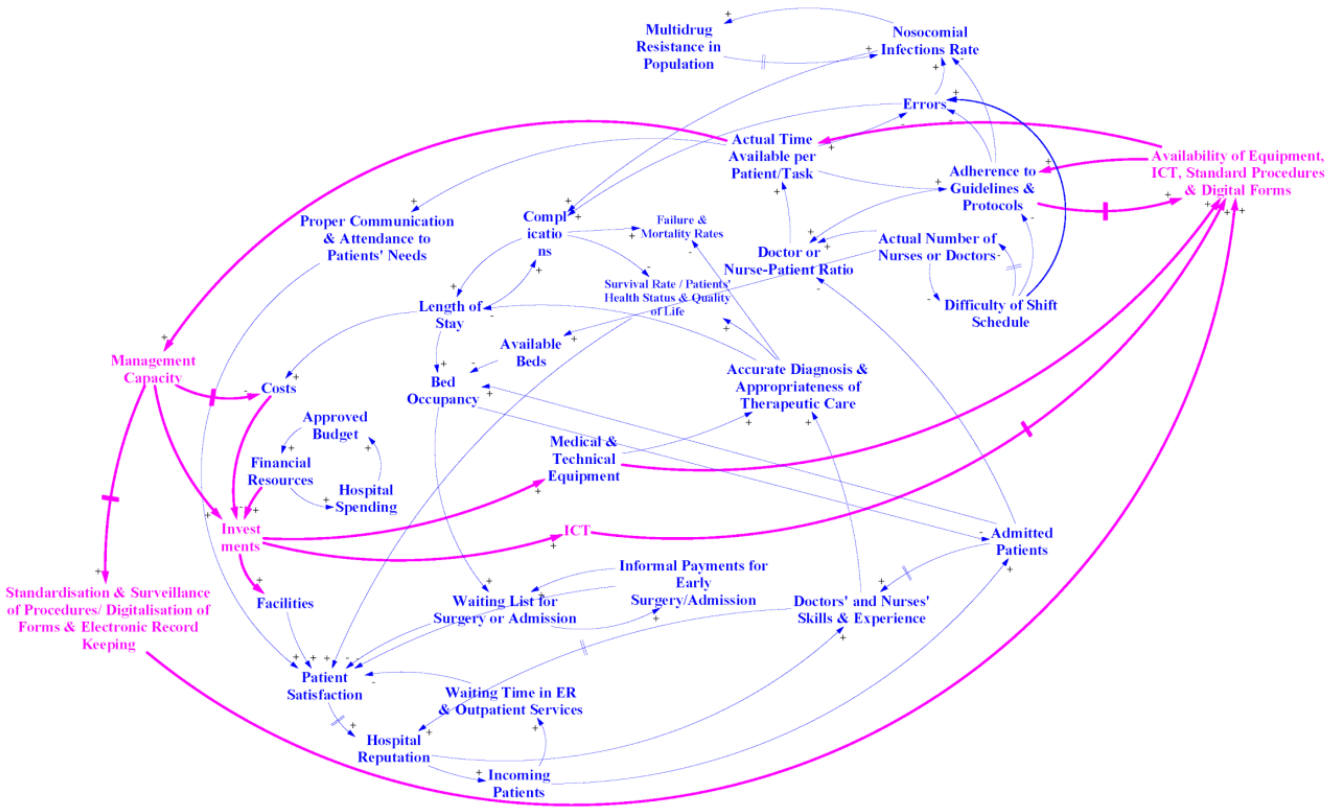
Appendix 21: Conceptual Model of Hospital Performance (Convergent CLD version)

The *Conceptual* and the *Policy Model of Hospital Performance* incorporates the performance management policies imposed by the Greek government during the Healthcare Reform and could be used to explain the dynamics of the negative outcomes. It depicts the actual structure of the system at hand, and explains the current levels of hospital performance. It shows what has been happening until now and what will continue to happen if actions are not taken; if no different policies are implemented that would change the "structure" of the system.

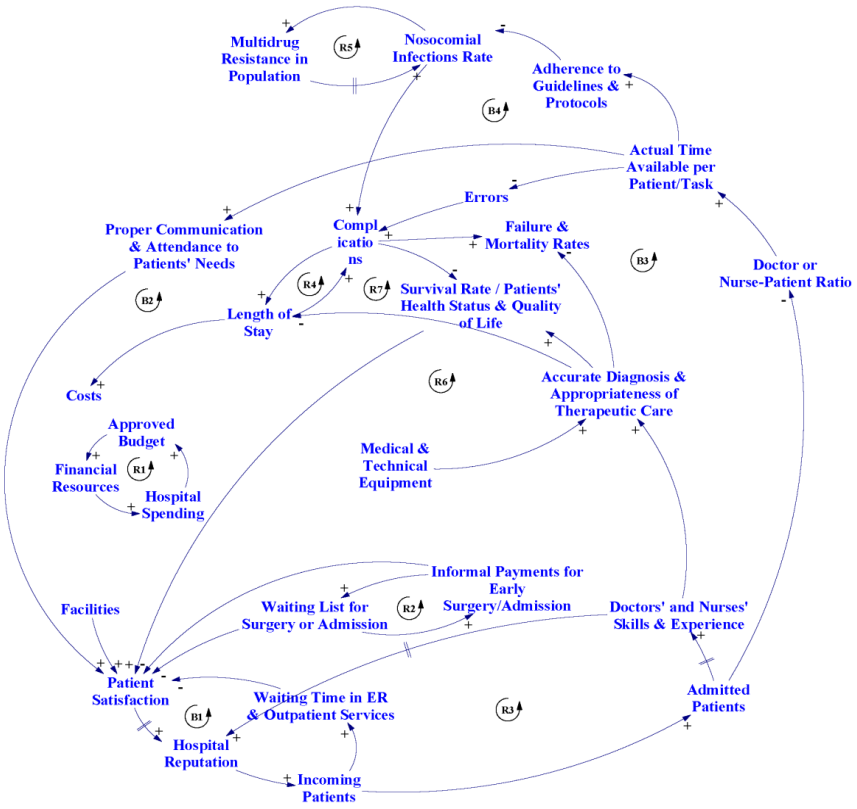


Appendix 22: Policy Model of Hospital Performance (Convergent CLD version with Policy Structure)

The *Policy Model of Hospital Performance* is exactly the same as the *Conceptual* and the *Policy Model of Hospital Performance*, but extended to incorporate the policy structure (i.e., the pink variables and the pink causal links). The *Policy Model of Hospital Performance* incorporates the performance management measures imposed by the Greek government but depicts not only the actual structure of the system at hand, but also the changes in the system structure which are necessary, according to our participant stakeholders, in order to change the current situation. It explains what has been happening until now and what actions should be taken in the form of new policies that should be implemented in order for the current situation to change in the future and for the hospital performance to improve. It worth mentioning that most of the policy interventions that participants came up with to improve hospital performance are similar to the operational objectives identified in our documents analysis.



Appendix 23: Simplified Conceptual Model of Hospital Performance & the Model Loops



Reinforcing Loops

R1 – Budgetary Control & Cutback Management

(*Approved Budget-Financial Resources-Hospital Spending*)

R2 – Informal Payments & Corruption

(*Informal Payments for early Surgery/Admission - Waiting List for Surgery or Admission*)

R3 - Doctors' and Nurses' Skills Building

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctors' and Nurses' Skills & Experience*)

R4 - *Length of Stay & Complications*

(*Length of Stay – Complications*)

R5 – Multidrug Resistance in the General Population

(*Multidrug Resistance in Population - Nosocomial Infections Rate*)

R6 – Clinical Efficiency & *Hospital Reputation*

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctors' and Nurses' Skills & Experience - Accurate Diagnosis & Appropriateness of Therapeutic Care - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction*)

R7 – *Complications* & *Hospital Reputation*

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctors' and Nurses' Skills & Experience - Accurate Diagnosis & Appropriateness of Therapeutic Care - Length of Stay – Complications - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction*)

Balancing Loops

B1 – Word of Mouth & Waiting Times

(*Hospital Reputation - Incoming Patients - Waiting Time in ER & Outpatient Services - Patient Satisfaction*)

B2 – Patient Satisfaction & Attendance to Patients' Needs

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctor or Nurse-Patient Ratio - Actual Time Available per Patient/Task* - Communication & Attendance to Patients' Needs - *Patient Satisfaction*)

B3 - Actual Time Available & Errors

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctor or Nurse-Patient Ratio - Actual Time Available per Patient/Task – Errors – Complications - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction*)

B4 - Actual Time Available and *Adherence to Guidelines & Protocols*

(*Hospital Reputation - Incoming Patients - Admitted Patients - Doctor or Nurse-Patient Ratio - Actual Time Available per Patient/Task - Adherence to Guidelines & Protocols - Nosocomial Infections Rate – Complications - Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction*)

Appendix 24: Models' Documentation (Definitions and Explanations of Model Variables and Causal Links)

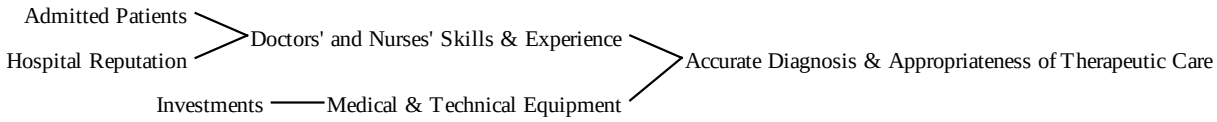
In this appendix we will analytically present and explain all the variables and causal links of the *Policy Model of Hospital Performance,* as defined by the participants stakeholders. For each variable we will give the definition, some more explanations if needed and the Causal Links of the variable. More specifically, in the section Causal Links we will present the "Causes Tree" (i.e., the graphical representation of all the causal links that are coming towards the variable at hand) and the "Uses Tree" (i.e., the graphical representation of all the causal links that are going out from the variable at hand) and we will explicitly analyse, explain and discuss all the causal links between the variable at hand and the other variables in the model.

1. *Accurate Diagnosis & Appropriateness of Therapeutic Care*

By *Accurate Diagnosis & Appropriateness of Therapeutic Care* participant stakeholders mean the rate of hospital doctors' accurate diagnoses to *Incoming Patients* and subsequently the level of appropriate Therapeutic Care delivered to the patients, based on that diagnosis.

Causal Links

In our model, *Accurate Diagnosis & Appropriateness of Therapeutic Care* is a function of two other variables: *Medical & Technical Equipment*; and *Doctors' and Nurses' Skills & Experience*.

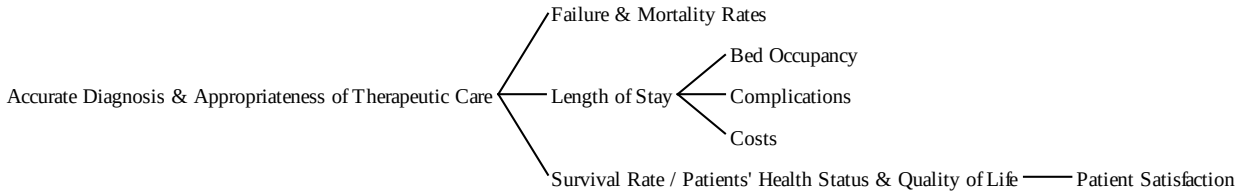


As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Accurate Diagnosis & Appropriateness of Therapeutic Care* :

-increases as the *Doctors' and Nurses' Skills & Experience* increases. This is quite obvious and intuitive, as the more educated, skilled and experienced doctors and nurses are, the more probable is that they are going to provide patients with more accurate diagnosis and appropriate care.

-increases as the hospital's *Medical & Technical Equipment* increases. This is because the more modern and more advanced and up-to-date the medical and biomedical equipment of a hospital is, the more tools the doctors and nurses have to diagnose patients accurately and treat them correctly and safely. Biomedical equipment technology is continuously being invented and improved. Older machines are usually more invasive, less accurate and safe and come with limited capabilities and capacity in respect to more modern ones. Technical equipment is associated with patients' safety during treatment, thus modern technical equipment would make the hospital a safer place not only for the patients but also for the health workers. Furthermore, old medical and technical

equipment and machinery in hospitals are more problematic due to the fact that they are in use for a long time, and are often being damaged and out of use, creating additional delays and problems in the everyday work of the hospital staff.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Accurate Diagnosis & Appropriateness of Therapeutic Care* leads to the:

-decrease of the *Length of Stay*, because getting the right diagnosis means that patients are provided with the right treatment for their condition right away, which means that they will get better soon and will be dismissed earlier.

-decrease of the *Failure & Mortality Rates*, because getting the right diagnosis means that patients are provided with the right treatment for their condition and will avoid death, if their condition is fatal

-increase of the *Survival Rate / Patients' Health Status & Quality of Life*, because getting the right diagnosis means that patients are provided with the right treatment for their condition and will survive a fatal condition, or be able to treat a condition that would deteriorate their quality of life if it remained undiagnosed or improperly treated.

2. *Actual Number of Nurses or Doctors*

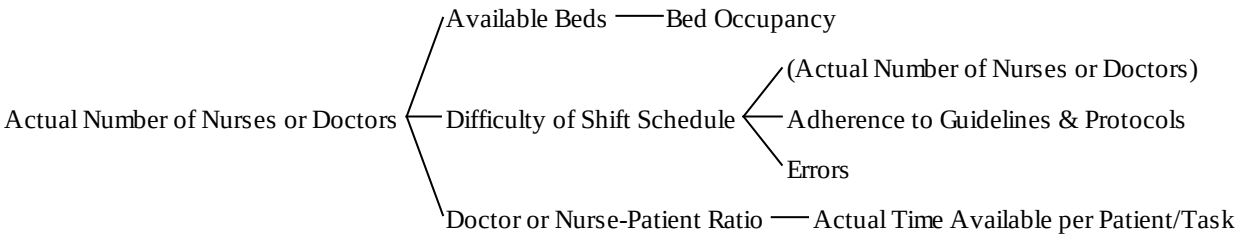
According to our participants, the *Actual Number of Nurses or Doctors* is the number of "active" nurses or doctors who are placed at the clinics, directly treating patients and participating in the shifts and overnights schedule of their clinic.

Causal Links

In our model, the *Actual Number of Nurses or Doctors* is a function of the variable *Difficulty of Shift Schedule*.

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the *Actual Number of Nurses or Doctors* decreases, as the Difficulty of the Shift schedule increases. This is because the more difficult the Shifts' schedule gets, the more the necessary rests are not respected; thus, the more tired and burned-

out doctors and nurses will feel, and the more probable is that they will take advantage of justified absences, sick leaves and other types of leaves.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that a low *Actual Number of Nurses or Doctors* leads to the:

-increase of the *Difficulty of Shift Schedule*. This is because the *Actual Number of Nurses or Doctors* represents the number of the "active" staff placed at the clinics treating patients and participating in the shifts and overnights schedule. The lower their number gets, the less people are the ones who have to adequately cover all shifts in the schedule that should normally be covered by more people. In order for fewer people to cover all shifts, they need to work overtime, long-hours shifts and not respect the necessary rests between shifts, which increases the difficulty of the shifts schedule for all the staff.

-decrease of the *Doctor or Nurse-Patient Ratio*. This is because the *Actual Number of Nurses or Doctors* is the nominator of this Ratio, thus the lower their number, the lower the ratio.

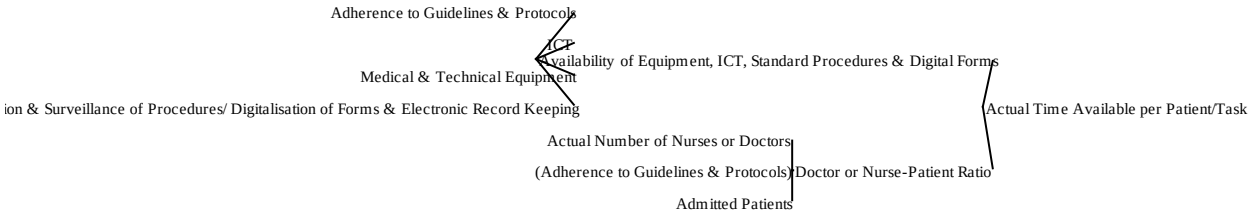
-decrease of the *Available Beds*. According to the GMB participants, the number of *Available Beds* does not refer to the physical number of beds as *Facilities*, but at the number of "active" beds depending on the number of "active" doctors and nurses available. In other words, the number of *Available Beds* in clinics and ICUs as well as the number of available Surgical Banks is not stable, but it dynamically changes depending on the actual number of "active" nurses and doctors.

3. *Actual Time Available per Patient/Task*

According to our participants, the *Actual Time Available per Patient/Task* is the net time that the hospital staff dedicates during their shift to each patient (for doctors and nurses) or task (for administrative staff).

Causal Links

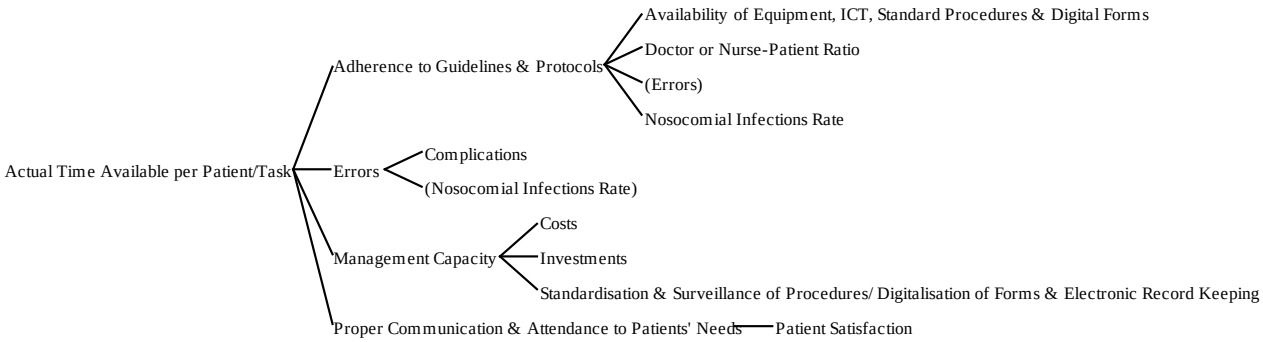
In our model, *Actual Time Available per Patient/Task* is a function of two other variables: *Availability of Equipment, ICT, Standard Procedures & Digital Forms*; and *Doctor or Nurse-Patient Ratio*.



As shown on the Causes Tree above, *Actual Time Available per Patient/Task*:

-increases as the *Availability of Equipment, ICT, Standard Procedures & Digital Forms* increases. This is because having modern medical equipment in place makes the work of the medical staff easier, faster and much more effective, while breaking down guidelines and protocols into steps of Standard Procedures & Duties and using IT Systems support and digital communication to implement those procedures makes their work much more effective and fast, compared to the way that they work now (i.e., filling in most of the paperwork and medical forms by hand and sending the hard copies back and forth to other departments for the communication of patients' details and exams results).

-increases as the *Doctor or Nurse-Patient Ratio* increases. A high *Doctor or Nurse-Patient Ratio* means that there are more "active" doctors or nurses per patient than they should or could, which means that each doctor or nurse has less patients to treat during their shift, and less tasks to fulfil than they would have otherwise, thus the actual time they have available for each patient increases. Seemingly, a low Nurse-Patient or Doctor-Patient Ratio means that the "active" doctors and nurses are less than they should, in respect to the number of patients, which means that they have much more patients to treat during their 8-hours shift than they should have, thus they have many more tasks to fulfil than they would have otherwise and the actual time they have available for each patient decreases.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that increase of *Actual Time Available per Patient/Task* leads to the:

- increase of *Adherence to Guidelines & Protocols*. This is mainly because, in their mind, following guidelines is "*a more time consuming way of doing things"*, and thus the more the time they have available to finish all their tasks during their shift, the more willing they are to allocate some time on following the guidelines-

provided of course that they already know how to do that, and have been educated and trained to the implementation of those guidelines and protocols. Even if they know that they should be doing this task differently to be consistent with the guidelines, they might decide not to do it in the proper way, in order to earn some time and finish their shift on time.

Moreover, some of the participant stakeholders mentioned that the more the actual time they *perceive* that they have available, the more relaxed they feel and the more probable it is that they will remember to stick to the guidelines. On the other hand, when they perceive that the actual time available during their shift is less than what they need, they feel under stress/pressure and in those conditions their mind might focus on finishing the core tasks and responsibilities, rather than on doing them properly by following exactly the guidelines.

-increase of *Proper Communication & Attendance to Patients' Needs*. This is because the more the net time that doctors and nurses have available to dedicate to each patient, the more "present" and "responsive" nurses and medical staff will be to each patients' needs and the more the time they will spend with each one of them, answering their questions and giving them information and instructions regarding their condition, treatment and personal care.

-increase of *Management Capacity*. This is because the managers' capacity to fulfil their long-term management duties depends on the part of the actual time that they have available during their shift to devote to those management tasks. When their time is mostly spent on administrative and clinical duties (which are usually more urgent and more short-term and present-oriented), the time left for management duties (which are usually less urgent and more long-term and future-oriented) decreases and they are not able to build *Management Capacity* in the long term.

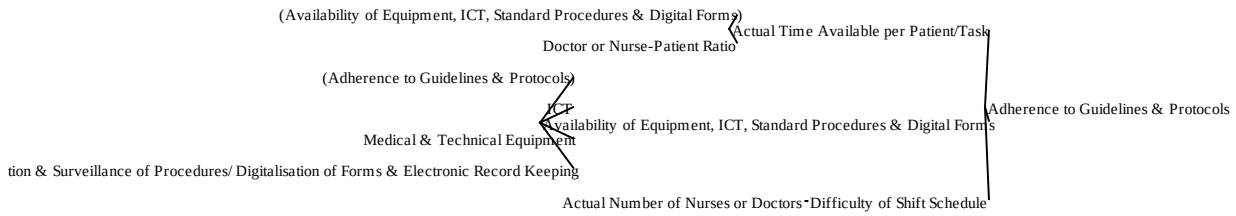
-decrease of *Errors*. This is because the more the *Actual Time Available per Patient/Task*, the more the time that doctors and nurses have available to spend with each patient, answering his/her questions and giving him and his carers information and instructions regarding his/her condition, treatment and personal care from their experience. Subsequently, usual patients' *Errors* which create *Complications* or unexpected readmissions will be avoided. Furthermore, the more the time medical and nursing staff spends with each patient, the better they will get to know and remember the condition of each patient and the less the medical and nursing staff's *Errors* due to miscommunication or insufficient attendance will be.

4. *Adherence to Guidelines & Protocols*

By *"Adherence to Guidelines & Protocols"* participant stakeholders mean the level at which the doctors and nurses as well as the rest of the paramedic staff follow the measures and procedures that are imposed by the national and international medical and nursing protocols and guidelines.

Causal Links

In our model, *Adherence to Guidelines & Protocols* is a function of three other variables: *Availability of Equipment, ICT, Standard Procedures & Digital Forms*; *Difficulty of Shift Schedule*; and *Actual Time Available per Patient/Task*. The level of *Adherence to Guidelines & Protocols* in our model can be from 0 to 1, where 0 equals to no adherence at all, and 1 equals to perfect adherence.

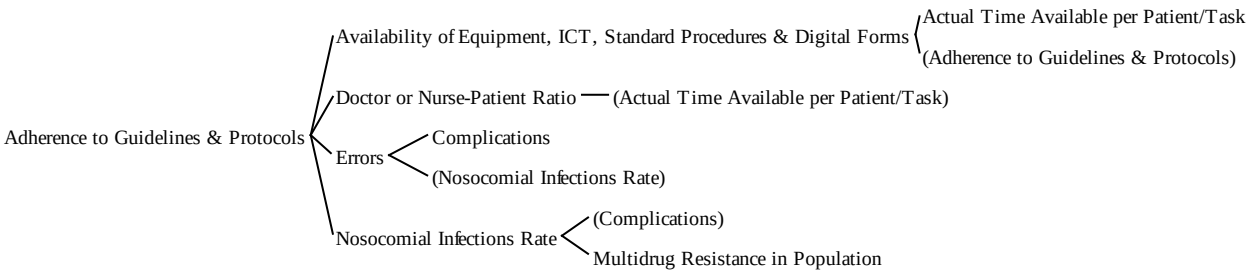


As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the Adherence to guidelines &protocols :

-increases as the *Actual Time Available per Patient/Task* increases. This is mainly because, in their mind, following guidelines is "*a more time consuming way of doing things"*, and thus the more the actual time they have available to finish all their tasks during their shift, the more willing they are to allocate some time on following the guidelines- provided of course that they already know how to do that, and have been educated and trained to the implementation of those guidelines and protocols.

-decreases, as the *Difficulty of Shift Schedule* increases. This happens for a number of reasons. First of all, the more difficult the Shift schedule is – meaning that the necessary rests are not respected - the more tired and sleepy the health workers might feel during their (especially night) shifts, and the more probable is for them not to follow the guidelines properly. Secondly, when the shifts schedule is such that the necessary rests are not respected, department managers are not willing to create and implement an Internal Regulation. Another reason is that the more difficult their shift schedule is, the less rest they get, the more tired they feel and the more negatively their well-being and personal life is affected. This results in limited motivation for effective work, as well as to limited time and willingness to get more education and training. Lack of education and training, in turn, could mean lack of knowledge and/or capacity to implement protocols/guidelines and lack of awareness of the importance and the risks associated with the non-adherence to them.

-increases as the *Availability of Equipment, ICT, Standard Procedures & Digital Forms* increase. This is because breaking down guidelines and protocols into steps of Standard Procedures & Duties makes it easier for the medical staff to follow them, while having in place the necessary *Medical & Technical Equipment* and *ICT* support to implement those procedure makes it possible to follow those procedures in the time they have available, as they make the work of the medical and nursing staff much faster.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Adherence to Guidelines & Protocols* leads to the:

-decrease of *Nosocomial Infections Rate*. This is because adherence to guidelines, measures, nursing and medical protocols ensures among others Appropriate Patients handling, appropriate Material & Waste Management, adequate staff's vaccination coverage, and other measures and precautions which in turn limit the spread of *Nosocomial Infections Rate*.

-decrease of *Errors*. This is because the more the adherence to guidelines and medical protocols, the more Appropriate the Patients handling, the more measures and precautions are taken by the hospital staff for the safety of the staff and the patients and usual *Errors* are avoided.

-increase of the *Availability of Equipment, ICT, Standard Procedures & Digital Forms* in the long run. This is because the existence and adherence of guidelines & protocols in the hospital "pushes" in the long run for the specification and acquisition of the necessary medical equipment and for the standardisation of procedures (internal regulations; nurses' duties; work distribution and shift schedules that respect the necessary rests; safety measures, etc.) to be created and implemented.

-increase of the *Doctor or Nurse-Patient Ratio* (Number of Nurses or Doctors / *Admitted Patients*). This is because the adherence to international guidelines "pushes" for the right proportions of doctors or nurses in respect to patients admitted to be respected (i.e., Indicated *Doctor or Nurse-Patient Ratio*).

5. *Admitted Patients*

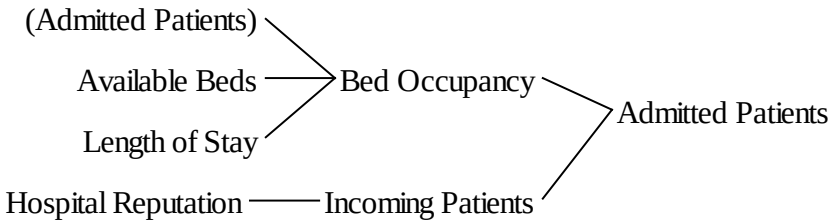
Admitted Patients are, according to the participants, the number of *Incoming Patients* who already got examined in the Emergency Department or in the outpatient services of the hospital and are now admitted to one of the hospital clinics or units for surgery, ICU or other operation or treatment.

Explanations

As each admitted patient occupies one of the *Available Beds*, the number of *Admitted Patients* equals the number of covered beds in the clinic in which he/she is admitted, and in the hospital. Thus, the maximum number of *Admitted Patients* at a certain moment in time cannot be higher than the number of *Available Beds* (i.e., the number of "active" beds depending on the number of "active" doctors and nurses available) in the clinic in which he/she is admitted and in the hospital.

Causal Links

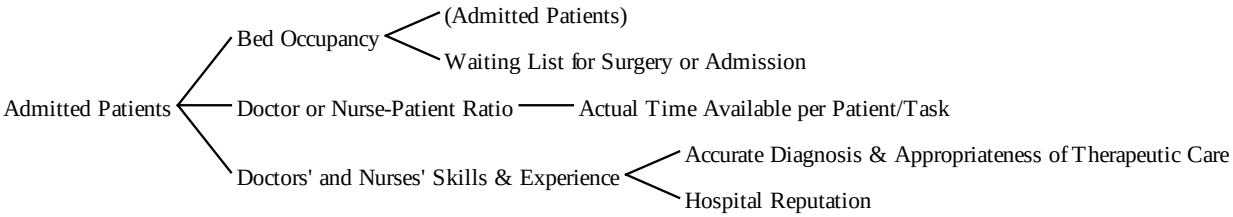
In our model, *Admitted Patients* is a function of two other variables: *Bed Occupancy*; and *Incoming Patients*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Admitted Patients*:

-increase as *Incoming Patients* increase. This is quite intuitive, as the higher the volume of the *Incoming Patients*, the higher the number of patients that will need to be admitted.

-decreases, as the *Bed Occupancy* increases. This is because the higher the *Bed Occupancy*, the more "selective" the doctors will be in admitting a patient.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that increase of *Admitted Patients* leads to the:

-increase of *Doctors' and Nurses' Skills & Experience*. This is logical, as the more the patients that are admitted under treatment, the more cases nurses and doctors have to work on, and the more experience and skills they will gain.

-decrease of the *Doctor or Nurse-Patient Ratio*. This is because the *Doctor or Nurse-Patient Ratio* is the number of active nurses or doctors (nominator) to the number of *Admitted Patients* (denominator). Thus, as the denominator increases, the ratio decreases.

-increase of *Bed Occupancy*. This is because *Bed Occupancy* is the rate of covered beds, which equals the *Admitted Patients* (nominator), to the *Available Beds* (denominator) for a certain period of time. Thus, as the nominator "*Admitted Patients*" increases, the rate increases.

6. *Approved Budget*

By *Approved Budget* participants mean the amount of state money which is pre-approved by the Greek Ministry of Health on an annual basis to be in the disposition of the hospital in order to cover its needs.

Explanations

This is a financial budget which is supposed to be used for all kinds of needs and expenses of the hospital for one fiscal year, apart from the wages of the regular employees (i.e., all permanent public workers, including doctors, nurses, paramedic and administrative staff) which are directly paid by the central government.

At the end of each fiscal year and based on the *Hospital Spending* of this year, the Greek Ministry of Health approves and declares the approved financial budget of each hospital to be at their disposition for the next fiscal year. However, reimbursements are given on the basis of the total spending, meaning that if the total spending is less than the *Approved Budget* during the fiscal year, the remaining amount of pre-*Approved Budget* funds just gets lost, and does not slip to the next fiscal year.

Although public hospitals in Greece might have some earnings from other sources (i.e., rent services, collection of interest rates or medical bills from foreign citizens, etc) most of the Greek public hospitals' *Financial Resources* come mainly or solely from the state, and must be limited to the amount of this pre-approved annual hospital budget.

Causal Links

In our model, *Approved Budget* is a function of the variable *Hospital Spending*.

Financial Resources —— Hospital Spending —— Approved Budget

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the Next Year's *Approved Budget*:

-increases as the past year's *Hospital Spending* increases. This is because the Ministry of Health has been trying to gradually cut off hospital budgets since the economic crisis and the austerity measures were initiated in 2009-2011, in an attempt to "sanitise" public spending. The Ministry's way to do that is checking the past year's spending and according to that, issue the same or a slightly lower budget for the next year.

As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that Approved Hospital Budget leads to the:

-increase of *Financial Resources* available, which is quite intuitive as the higher the *Approved Budget*, the more money the hospital manager has in his disposition "legally" to allocate to the different departments and cover needs.

7. *Availability of Equipment, ICT, Standard Procedures & Digital Forms*

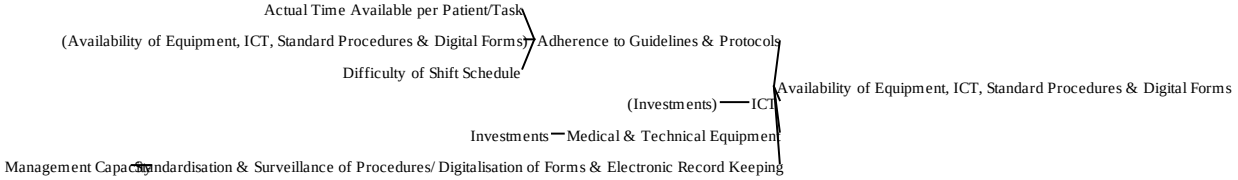
By *Availability of Equipment, ICT, Standard Procedures & Digital Forms* participants mean the level at which the necessary Equipment, IT Systems, Digital Communication Systems and Standard Procedures are available, accessible, easily useable by the hospital staff, as well as that their use is being monitored and supported by the supervisors and managers.

Explanations

With this variable our GMB participants recognise the importance not only of the existence but also of the informed and active use of all those resources (Equipment, IT Systems, Digital Communication Systems, Standard Procedures), which they consider vital for their work and critical for the quality of healthcare services provided to the patients.

Causal Links

In our model, *Availability of Equipment, ICT, Standard Procedures & Digital Forms* is a function of four other variables: *Adherence to Guidelines & Protocols*; *Medical & Technical Equipment*; *ICT*; and *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*. The level of *Availability of Equipment, ICT, Standard Procedures & Digital Forms* in our model can be from 0 to 1, where 0 equals to no availability at all, and 1 equals to perfect availability, i.e., abundance of all those resources.



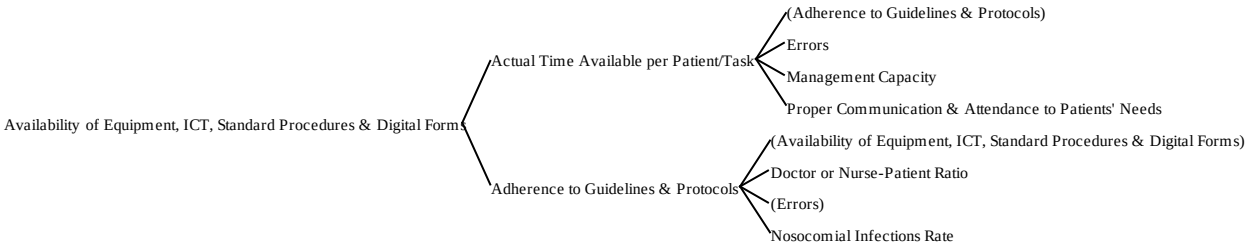
As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Availability of Equipment, ICT, Standard Procedures & Digital Forms*:

-increases as the *Medical & Technical Equipment* increases. This is quite intuitive, as the more the equipment bought, the more the equipment available. The scarcity of medical equipment in the ER or in the clinics – even of cheap equipment, such as thermometers and oximeters – now largely exists and creates huge delays. Having advanced medical equipment in place makes the work of the medical staff easier, faster and much more effective.

-increases as the *ICT* increases. This is again quite intuitive, as the more the *ICT* systems developed and implemented, the more the *ICT* systems available. The usage of Information Systems and digital communication can make the work of doctors, nurses and administrative staff much more effective and fast, compared to the way that they work now (i.e., filling in most of the paperwork and medical forms by hand and sending the hard copies back and forth to other departments for the communication of patients' details and exams results). However, such systems should be created for the users and thinking of the users, in order to make their life easier, not harder. Most of the times, users and department managers are not involved in the procedure of creating an IT or *ICT* application, which results in delivering applications which are not useful for users. Furthermore, even a user-friendly and useful, in that sense, application seems difficult in the beginning for most users. Thus IT support staff must be placed at the beginning for some time after an intervention is introduced, together with the managers and staff, in order to support and help them learn how to use it.

-increases as the *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping* increases. The more the guidelines and protocols "translated" into easy, simple and standard procedures, the greater the availability of those standard procedures for the staff to follow them during the delivery of their (medical or nursing) practice and for the managers to surveil them. Breaking down guidelines and protocols into steps of Standard Procedures & Duties and creating digital nursing and medical forms - integrated into the hospital's information system (ERP), in order for the patients' information to be easily, accurately and quickly filled in, signed and distributed in other units and departments of the hospital - makes it easier for the medical staff to follow and use them, while having in place the necessary medical equipment and IT Systems support to implement those procedure makes it possible to follow those procedures in the time they have available.

-increases as the *Adherence to Guidelines & Protocols* increases. This is because supposing that following guidelines and protocols was obligatory for hospitals, that would "force" department managers devote time and do the necessary *Investments* in medical and technical equipment and have it in place; create and utilise the IT applications necessary; specify duties, procedures, work distribution and the indicated (maximum/minimum) ratios to be respected, such as nurses to patient and doctors to patient ratios. All those things would then become the priority, and not a long-term goal which is always let aside because priority is given to the every-day, practical and short-term but urgent tasks, which however maintain the same situation and do not provide for the future.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Availability of Equipment, ICT, Standard Procedures & Digital Forms* leads to the:

-increase of the *Actual Time Available per Patient/Task*. This is because having advanced medical equipment in place makes the work of the medical staff easier, faster and much more effective, while breaking down guidelines and protocols into steps of Standard Procedures & Duties and using IT Systems support and digital communication to implement those procedures makes their work much more effective and fast, compared to the way that they work now (filling in most of the paperwork and medical forms by hand and sending the hard copies back and forth to other departments for the communication of patients' details and exams results). Currently, the non-existent or non-adequate Information Systems and *ICT* infrastructure, the old and scarce medical equipment and the lack of specific work distribution, standard procedures and duties makes their everyday work much more time-consuming and decrease their actual time available.

-increase of the *Adherence to Guidelines & Protocols*. This is because breaking down guidelines and protocols into steps of Standard Procedures & Duties makes it easier for the medical staff to follow them, while having in place the necessary medical equipment and IT Systems support to implement those procedure makes it possible to follow those procedures in the time they have available, as they make the work of the medical staff much faster. Thus, they are more willing to follow the guidelines if they have all the materials and equipment that they need to do it, as well as the necessary time available to do it.

8. *Available Beds*

By *Available Beds* participants mean the number of "active" beds depending on the number of "active" doctors and nurses available.

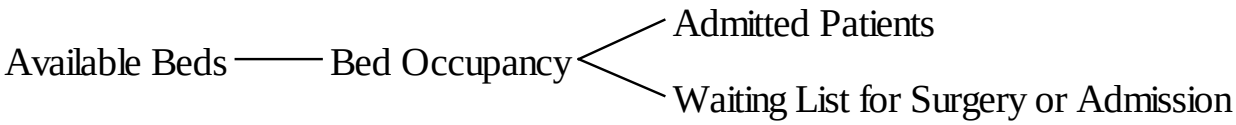
Causal Links

In our model, *Available Beds* is a function of the variable: *Actual Number of Nurses or Doctors*.

Difficulty of Shift Schedule —— Actual Number of Nurses or Doctors —— Available Beds

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Available Beds*:

-increase, as the *Actual Number of Nurses or Doctors* increase. This is because there are certain regulations that define how many doctors or nurses there should be per acute bed or per surgical bank, for example. Subsequently, department managers announce how many "active" or "available" beds they have according to the staffing conditions of their department. Those restrictions, however, are not universally and equally respected by all the Greek public hospitals there is a wide variation between different clinics and departments as well.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that a decrease in the *Available Beds* leads to the:

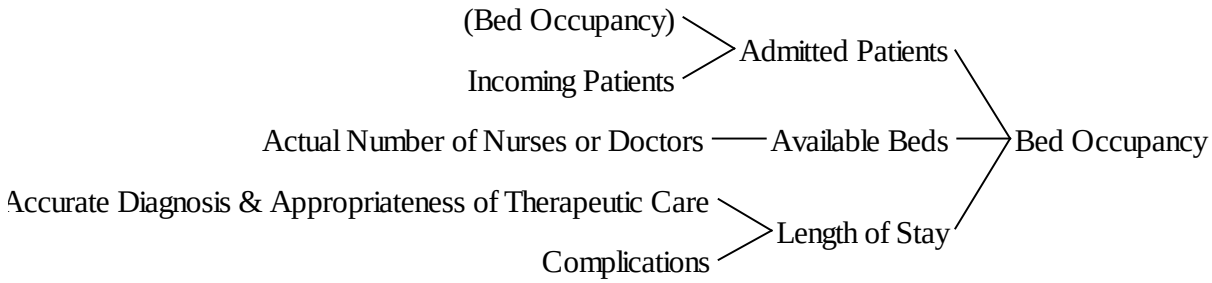
-increase of the *Bed Occupancy*. This is because *Bed Occupancy* is the rate of covered beds, which equals the *Admitted Patients* (nominator), divided by the *Available Beds* (denominator) for a certain period of time. Thus, as the denominator "*Available Beds*" decreases, the rate increases.

9. *Bed Occupancy*

Bed Occupancy Rate is for our GMB participants a measure of utilization of the available bed capacity, and is calculated by the number of covered beds, which equals the number of *Admitted Patients* (nominator) multiplied by their *Length of Stay* (in days) during a certain period of time (i.e., one years' time) and divided by the number of *Available Beds* multiplied by that period of time in days (denominator).

Causal Links

In our model, *Bed Occupancy* is a function of three other variables: *Admitted Patients*; *Available Beds*; and *Length of Stay*.

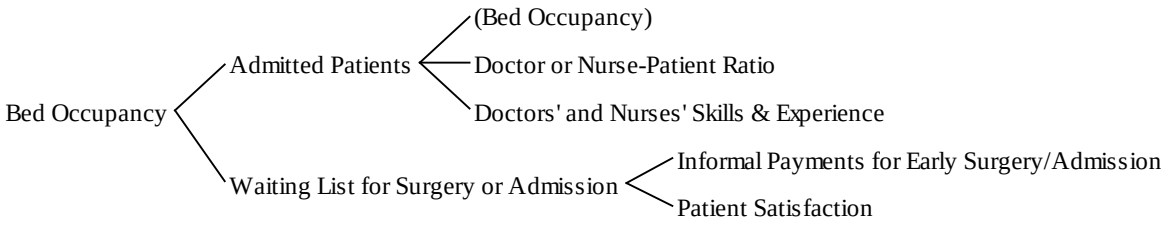


As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Bed Occupancy*:

-increases as the *Length of Stay* increases. This is because *Bed Occupancy* is a rate which gets higher when many beds are covered for longer time. Thus, the higher the stay, the longer the period that the bed is covered by the patient and the higher the *Bed Occupancy* rate.

-increases as the *Admitted Patients* increases. This is because *Bed Occupancy* is a rate which gets higher when many beds are covered for longer time. Thus, the higher the number of *Admitted Patients,* the higher the number of covered beds in a given period of time, and the higher the *Bed Occupancy* rate.

-decreases as the *Available Beds* increase. This is because *Available Beds* is in the denominator of the *Bed Occupancy* rate for a certain period of time. Thus, as the denominator "*Available Beds*" decreases, the rate increases.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that high *Bed Occupancy* rate leads to the:

-decrease of the *Admitted Patients*. This is because the higher the *Bed Occupancy*, the more "selective" the doctors will be in admitting a patient, and the less the *Admitted Patients* will be than otherwise.

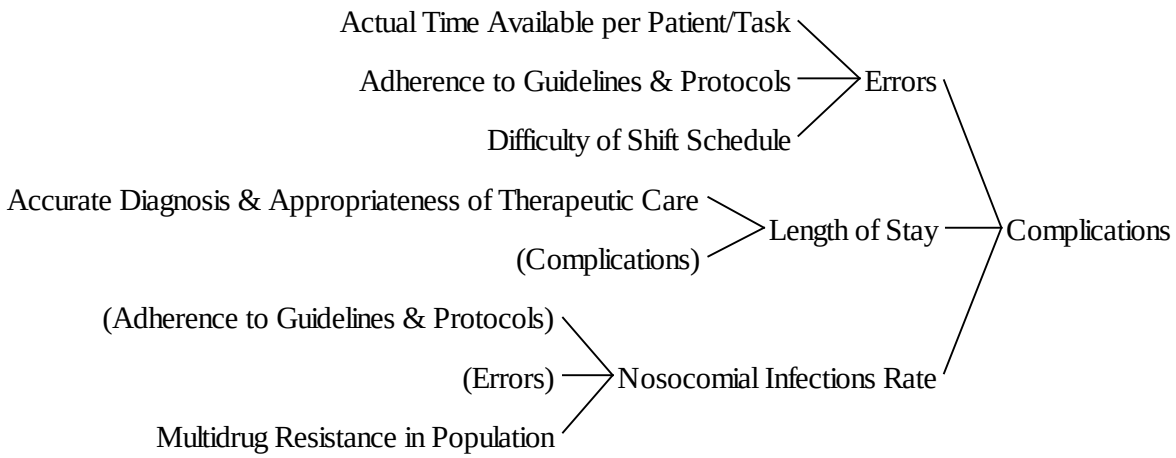
-increase of the *Waiting List for Surgery or Admission*. This is logical, as before calling a patient from the waiting list to be admitted for a surgery, transplant or ICU, administrative staff needs to make sure that there are surgical banks as well as beds available in ICU and at the corresponding clinic. If all the *Available Beds* are covered, all patients on the waiting list have to wait more time and, in the meanwhile, more patients are being placed on the waiting list, making it even bigger and increasing the average waiting time for all the patients on the list.

10. *Complications*

Complications, according to our participants, is the rate at which unintended secondary diseases, conditions or infections occur during the treatment of *Admitted Patients* in the hospital, deteriorating their health status and causing them death or forcing them to stay more time admitted in order to recover.

Causal Links

In our model, *Complications* is a function of three other variables: *Length of Stay*; *Errors*; and *Nosocomial Infections Rate*.

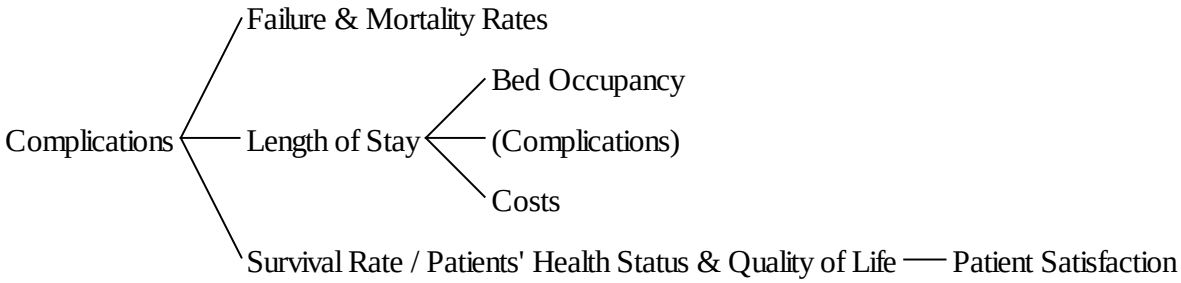


As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Complications*:

-increase as the *Length of Stay* increases. This is because *Length of Stay* augments the chances that a complication occur: the more time the inpatient is being treated, the more become the chances that he/she gets a nosocomial infection or that he/she becomes subject to an error of the medical staff.

-increase as the *Nosocomial Infections Rate* increases. This is because the higher the Hospital's *Nosocomial Infections Rate*, the more are the chances that a patient gets infected in a given time period.

-increase as the *Errors* increase. This is because personnel's or patients' and carers' o*Errors* (e.g., mistaken dosage of the right medicine or wrong medicine) directly cause *Complications* to the patients, sometimes serious ones.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Complications* lead to the:

-increase of the *Length of Stay*. This is because *Complications* deteriorate the patient's health state and oblige him/her to stay more time admitted until he/she recovers.

-increase of *Failure & Mortality Rates*, because *Complications* during hospital treatment might cause death.

-decrease of *Survival Rate / Patients' Health Status & Quality of Life*, because *Complications* during hospital treatment might cause long-term disabilities and chronic conditions to the patient.

11. *Costs*

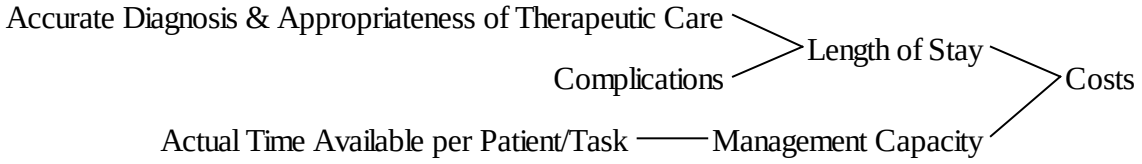
As *Cost* our participants intend the expenses made by the hospital in one fiscal year for the supply of all kinds of hospital services and non-durable goods which are borne by the hospital budget, such as medicine, materials, cleaning services, etc.

Explanations

The expenses for supplies which concern durable goods are described by a different variable called "*Investments*" (i.e., advancements in *Facilities*, equipment and *ICT*). Furthermore, the variable cost does not include hospital expenses which are not borne by the hospital budget (i.e., expenses directly paid by the Ministry of Health or other government entities, such as the wages of the regular employees - doctors, nurses, paramedic and administrative permanent staff - who are directly paid by the central government, for example).

Causal Links

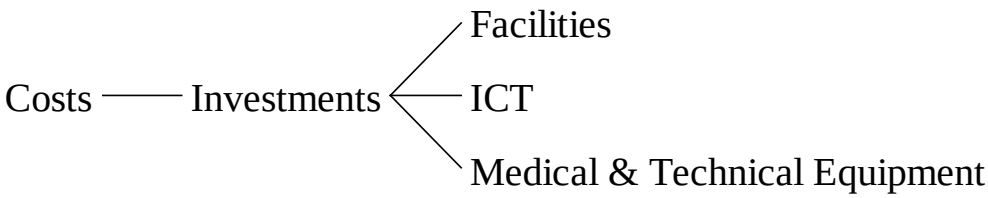
In our model, *Costs* is a function of two other variables: *Management Capacity*; and *Length of Stay*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the *Costs*:

-increase as the *Length of Stay* increases. This is because longer stay means usage of more materials and medication, more diagnostic tests and biochemical examinations, all of which create extra cost per patient for the hospital, than there would be otherwise.

-increase as the *Management Capacity* decreases. This is because limited *Management Capacity* leads to the need of extra administrative personnel (i.e., personnel hired under fixed-term contracts of employment to help with the management responsibilities of the hospital managers that are not fulfilled) that is paid from the *Approved Budget*, creating extra cost and an extra burden for the budget of the hospital.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that higher *Costs* lead to the:

-decrease of *Investments*. This is because priority is given at covering first the most essential needs in non-durable goods (i.e., medicine, materials, etc) and services (i.e.,cleaning services) that are necessary for the everyday function of the hospital, and then towards the end of the fiscal year - and according to what is already spent - managers think about investing on medical or technical equipment, *Facilities* and *ICT* infrastructure. Thus, higher *Costs* of services and non-durable goods mean that not a lot of *Financial Resources* are left for *Investments*.

12. *Difficulty of Shift Schedule*

As *Difficulty of Shift Schedule* our participants mean the level of inconvenience (i.e., long, ten or twelve-hours-shifts; overtime work; excessive weekly work hours; night work; rotating shifts that do not respect the necessary rests in between; etc.) of the staff's Shifts and overnights Schedule.

Explanations

This level variates between doctors, nurses and paramedic staff and between the different departments and hospital units, as the different health workers' categories and units/departments all have different shift schedules.

This level of *Difficulty of Shift Schedule* can be from 0 to 1 in our model, where 0 equals to no difficulty at all, as perceived by the health workers (i.e., the number of active doctors or nurses are more than enough to cover all shifts in the shifts schedule; they can take a day off whenever they want to, thus no conflicts or problems arise between them; all the necessary rests between shifts are respected and they are never alone in the shift, nor do they need to work overtime in order to adequately cover all shifts) and 1 equals to perfect difficulty perceived by the staff, meaning that it seems to them almost impossible to adequately cover all shifts (i.e., the number of active doctors or nurses is not enough to adequately cover all shifts in the shifts schedule; they need to work almost every day of the week; they cannot take a day off when they need it, but instead the nursing service "gathers" their days off to be given to them sometime in the future and thus many conflicts and problems arise between them on a daily basis; the necessary rests between shifts are not respected; doctors or nurses are most of the time alone in the shift and they also need to work overtime in order to – inadequately - cover all the shifts).

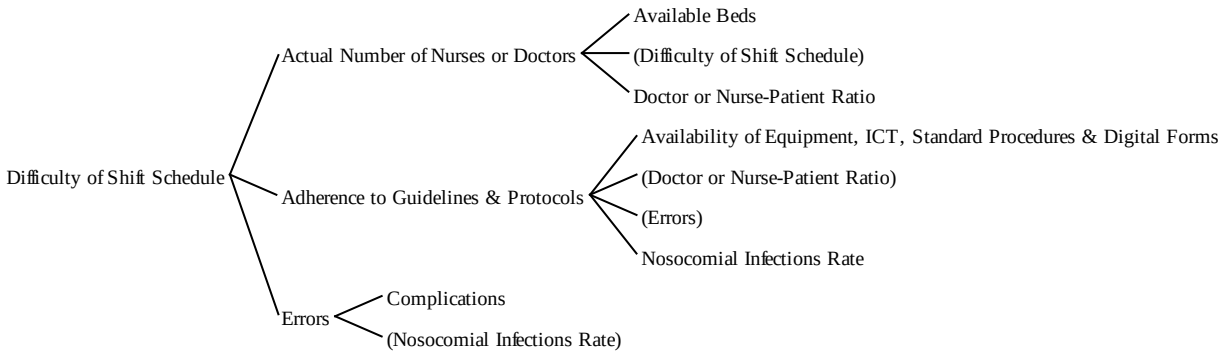
Causal Links

In our model, *Difficulty of Shift Schedule* is a function of the variable: *Doctor or Nurse-Patient Ratio*.

(Difficulty of Shift Schedule) — Actual Number of Nurses or Doctors — Difficulty of Shift Schedule

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that Difficulty of the Shift Schedule:

-increases as the *Actual Number of Nurses or Doctors* decreases. This is because the *Actual Number of Nurses or Doctors* represents the number of the "active" staff placed at the clinics treating patients and participating in the shifts and overnights schedule. The lower their number gets, the less people are the ones who have to adequately cover all shifts in the schedule that should normally be covered by more people. In order for fewer people to cover all shifts, they need to work overtime, long-hours shifts and not respect the necessary rests between shifts, which increases the difficulty of the shifts schedule for all the staff.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that Difficult Shift Schedule leads to the:

-decrease of the *Actual Number of Nurses or Doctors*. This is because the more difficult the Shifts' schedule is, without respecting the necessary rests, the more tired and burned-out doctors and nurses will feel, and the more probable is that they will take advantage of more justified absences and make use of sick leaves and other types of leaves. This will decrease even more the actual number of "active" staff, available to participate in the shifts schedule.

-decrease of the adherence to guidelines and protocols. This happens for a number of reasons. First of all, the more difficult the Shift schedule is – meaning that the necessary rests are not respected - the more tired and sleepy the health workers might feel during their (especially night) shifts, and the more probable is for them not to follow the guidelines properly. Secondly, when the shifts schedule is such that the necessary rests are not

respected, department managers are not willing to create and implement an Internal Regulation. Another reason is that the more difficult their shift schedule is, the less rest they get, the more tired they feel and the more negatively their well-being and personal life is affected. This results in limited motivation for effective work, as well as to limited time and willingness to get more education and training. Lack of education and training, in turn, could mean lack of knowledge and/or capacity to implement protocols/guidelines and lack of awareness of the importance and the risks associated with the non-adherence to them.

-increase of *Errors*. This is because the more difficult the Shift schedule is – meaning that the necessary rests are not respected - the more tired and sleepy the health workers might feel during their (especially night) shifts, and the more probable is for them to commit *Errors*.

13.*Doctor or Nurse-Patient Ratio*

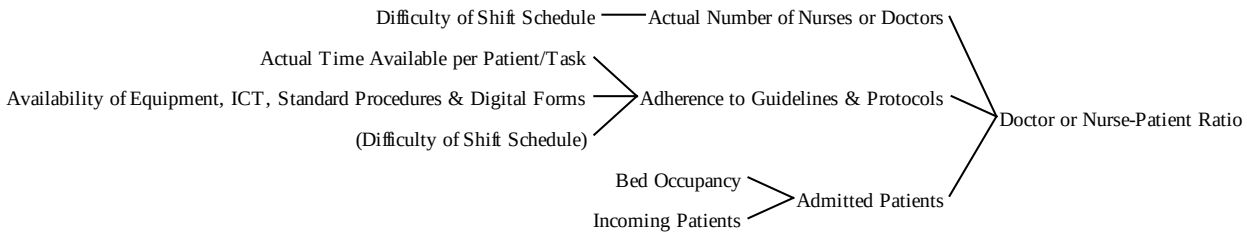
By *Doctor or Nurse-Patient Ratio* our GMB participants mean the ration of the actual number of "active" nurses or doctors (nominator) who are placed at the clinics and are participating at the shifts and overnights schedule and directly treating patients, divided by the number of *Admitted Patients* (denominator) at a certain moment in time.

Explanations

We named this variable "doctor or nurse" because it represents two different ratios: the*Doctor-Patient Ratio* and the *Nurse-Patient Ratio,* both of which are found to be critical for the analysis of the system of hospital performance. Our model is created by different kinds of participant stakeholders, thus it is built in a way that it incorporates different views and it facilitates different kinds of analyses for different purposes and stakeholders. Depending on our analysis every time (i.e. if we are using the model to analyse nurse-related dynamics or doctor-related dynamics), the variable *Doctor or Nurse-Patient Ratio* represents either the actual number of nurses or the actual number of doctors (nominator) divided by the number of *Admitted Patients* (denominator).

Causal Links

In our model, *Doctor or Nurse-Patient Ratio* is a function of three other variables: *Actual Number of Nurses or Doctors*;*Adherence to Guidelines & Protocols*; and *Admitted Patients*.

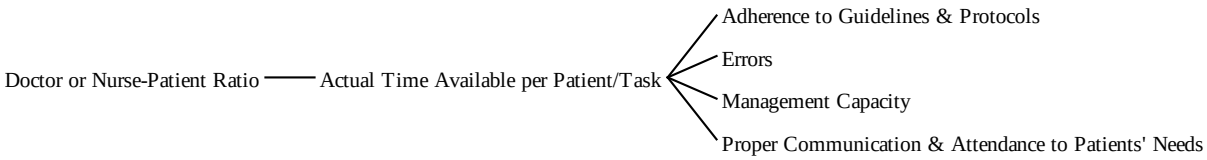


As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the *Doctor or Nurse-Patient Ratio*:

-increases as the *Actual Number of Nurses or Doctors* increases. This is because the *Actual Number of Nurses or Doctors* is the nominator of the ratio, thus the higher their number the higher the ratio.

-increases as the Adherence to Guidelines &Protocols increases. This is because national and/or international Guidelines provide indicated values of those ratios which should be respected for the patients' safety. Adherence to those Guidelines would mean strictly not surpassing the indicated value of the ratio (i.e., the Indicated Doctor-Patient Ratio or Nurse-Patient Ratio for a specific clinic, unit or department).

-decreases as the *Admitted Patients* increases. This is because the *Doctor or Nurse-Patient Ratio* is the number of nurses or doctors (nominator) to the number of *Admitted Patients*, which equals the number of *Admitted Patients* (denominator). Thus, as the denominator "*Admitted Patients*" increases, the ratio decreases.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that a low *Doctor or Nurse-Patient Ratio* leads to the:

-decrease of the Actual Time available during work hours. This is because a low Nurse-Patient or Doctor-Patient Ratio means that the "active" doctors and nurses are less than they should, in respect to the number of patients. Those few people are however the ones who have to carry the burden of all the patients, which means that they have much more patients to treat during their 8-hours shift than they should have, thus the actual time that they can devote to each one patient decreases.

14. *Doctors' and Nurses' Skills & Experience*

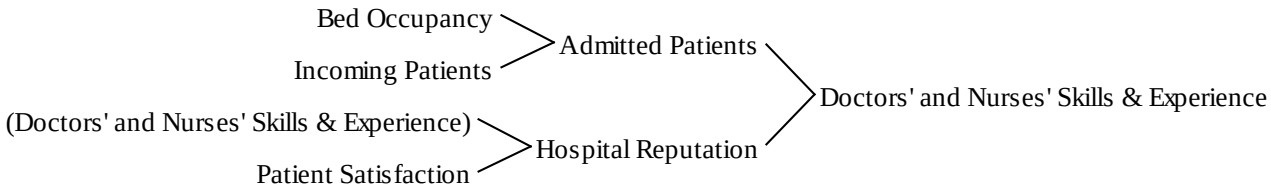
"*Doctors' and Nurses' Skills & Experience*" is, according to our participant stakeholders, the overall level of the medical and nursing skills and experience owned by the doctors and the nurses of the hospital respectively.

Explanations

According to our participants, this variable reflects the overall level of the "scientific quality" of the hospital's medical and nursing staff, which in turn affects the scientific quality of the services they deliver i.e., the accuracy of the diagnosis and the appropriateness of the therapeutic care provided.

Causal Links

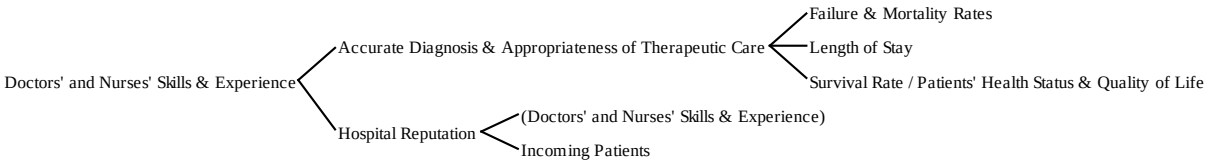
In our model, *Doctors' and Nurses' Skills & Experience* is a function of two other variables: *Hospital Reputation*; and *Admitted Patients*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that Doctors' and Nurses' Skills &Experience :

-increase as the *Hospital Reputation* increases. This is because when a hospital has a good reputation, high quality doctors and nurses are attracted to work in it, bringing their education, skills and experience to the Hospital's assets.

-increase as the *Admitted Patients* increases. This is logical, as more *Admitted Patients* means more patients under treatment, and the more patients there are, the more cases doctors and nurses have to work on, gaining more experience and skills.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Doctors' and Nurses' Skills & Experience* leads to the:

-increase of the *Accurate Diagnosis & Appropriateness of Therapeutic Care* for patients, which is quite logical as the better the quality of doctors, the better the chances for a correct diagnosis and, subsequently, for an appropriate treatment; and the better the quality of nurses, the better the therapeutic care provided for the patient.

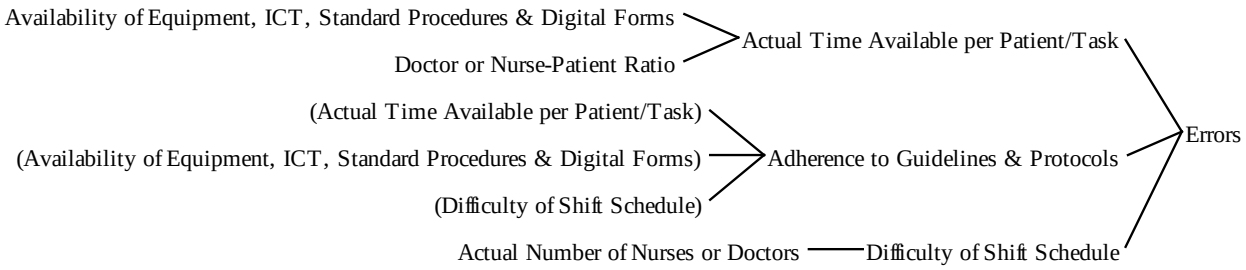
-increase of the *Hospital Reputation*, in the long term. This is because the reputation of the doctors' and nurses' skills and experience in the long term builds on the *Hospital Reputation* through the word of mouth.

15. *Errors*

By "*Errors*" our participants mean any unintended human action, omission, negligence, miscommunication, misunderstanding or misperception performed by the hospital doctors, nurses, health workers, or by the patients and their carers which might turn out to be harmful for the staff's, the patient's or the other patients' health and well-being.

Causal Links

In our model, *Errors* is a function of three other variables: *Actual Time Available per Patient/Task*; *Adherence to Guidelines & Protocols*; and *Difficulty of Shift Schedule*.



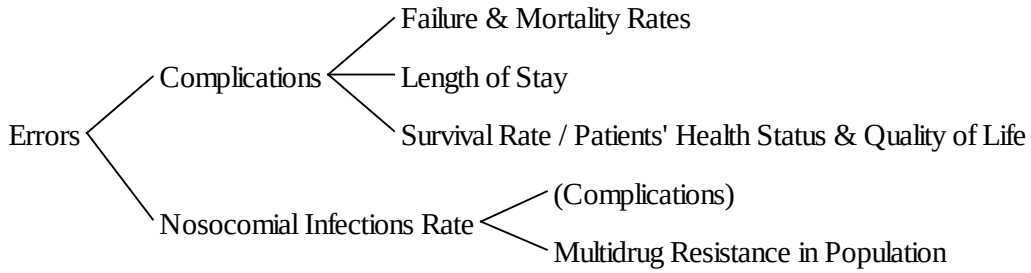
As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Errors*:

-decrease as the *Actual Time Available per Patient/Task* increases. This is because the more the *Actual Time Available per Patient/Task*, the more the time that doctors and nurses have available to spend with each patient, answering his/her questions and giving him and his carers information and instructions regarding his/her condition, treatment and personal care from their experience. Subsequently, usual patients' *Errors* which create *Complications* or unexpected readmissions will be avoided.

Furthermore, the more the time medical and nursing staff spends with each patient, the better they will get to know and remember the condition of each patient and the less the medical and nursing staff's *Errors* due to negligence, miscommunication, misunderstanding or misperception will be.

-decrease as the *Adherence to Guidelines & Protocols* increases. This is because the more the adherence to guidelines and medical protocols, the more Appropriate the Patients handling, the more measures and precautions are taken by the hospital staff for the safety of the staff and the patients and usual *Errors* are avoided.

-increase as the *Difficulty of Shift Schedule* increases. This is because the more difficult the Shift schedule is – meaning that the necessary rests are not respected - the more tired and sleepy the health workers might feel during their (especially night) shifts, and the more probable is for them to commit *Errors*.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Errors* lead to the:

-increase of *Complications*. This is because personnel's or patients' and carers' *Errors* (e.g., mistaken dosage of the right medicine or wrong medicine) directly cause *Complications* to the patient, sometimes serious ones.

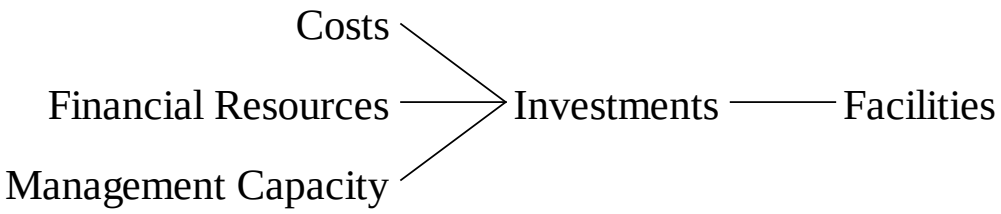
-increase of *Nosocomial Infections Rate*. This is because some of the medical and nursing staff's *Errors* (e.g., improper sterilization of catheters and surgical equipment) directly cause infections (i.e., urinary tract infections and surgical site infections respectively) to the patients.

16. *Facilities*

By *Facilities* the participant stakeholders of our GMB sessions mean the physical *Facilities* of the hospital's buildings and surrounding places, such as examination rooms, waiting rooms, doctors' offices, patients rooms, restaurants, outdoor play areas for children, furniture, etc; including aspects such as privacy, decoration and cleanness in rooms, toilets and common spaces; internet access for patients and guests; and other similar amenities related to the physical *Facilities* of the hospital and the comfort that the hospital *Facilities* provides to patients.

Causal Links

In our model, *Facilities* is a function of the variable *Investments*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Facilities* :

-increase as the *Investments* increase.The more the managerial and *Financial Resources* allocated to *Investments* in *Facilities*, the better the *Facilities* and the amenities provided will be.

Facilities —— Patient Satisfaction —— Hospital Reputation

As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that better *Facilities* lead to the:

-increase of *Patient Satisfaction*. Physical *Facilities* (e.g., modern and nicely decorated patient rooms, restaurants, outdoor play areas for children, furniture, etc) and other amenities provided by the hospital (e.g., privacy and cleanness in rooms, toilets and common spaces; internet access for patients and guests, etc) and other similar amenities related to the physical *Facilities* of the hospital and the comfort that the hospital *Facilities* provides to patients are very important aspects of the patients' hospitalisation experience and is largely what they have in mind when filling in Patient satisfaction questionnaires.

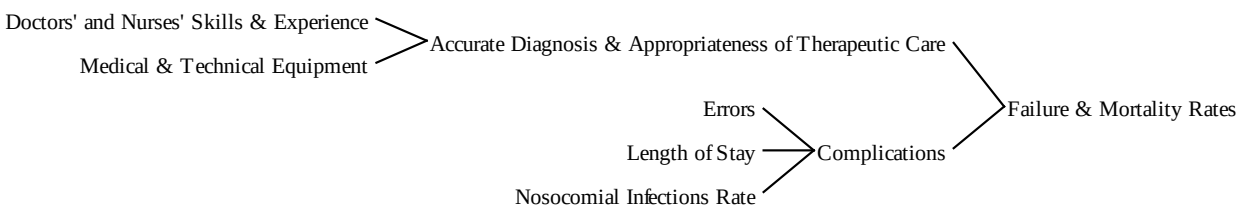
17. *Failure & Mortality Rates*

Mortality Rate is, according to our GMB participants, the rate at which hospitalised patients die during their treatment in the hospital or soon after that.

Failure Rate is, according to our GMB participants, the rate at which the hospital fails to provide the patient with the optimal treatment for his condition and age.

Causal Links

In our model, *Failure & Mortality Rates* is a function of two other variables: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; and *Complications*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Failure & Mortality Rates*:

-increase as the *Complications* increase. This is because the more the *Complications* during the treatment, the more compromised the immune system of the patient gets and the more are his/her chances of death. Furthermore, a compromised immune system makes it easier for the patient to get infected by contagious pathogens in the hospital environment and raises even more his chances of failure of the treatment or death.

-decrease as the *Accurate Diagnosis & Appropriateness of Therapeutic Care* increases. This is because the more Accurate the Diagnosis and - subsequently - the more appropriate the treatment provided for his condition, the better for the patient's outcome of the disease and the more his/her chances to recover and to survive.

18. *Financial Resources*

By *Financial Resources* participants mean the total amount of money that the hospital has available in order to cover all its expenses for the supply of durable and nondurable goods and services in one fiscal year.

Explanations

Although public hospitals in Greece might have some earnings from other sources (i.e., rents of services, use of privately owned real estates, collection of interest rates or medical bills from foreign citizens, donations, etc) most of the Greek public hospitals' *Financial Resources* come from the state, and is limited to the amount of the annual *Approved Budget*.

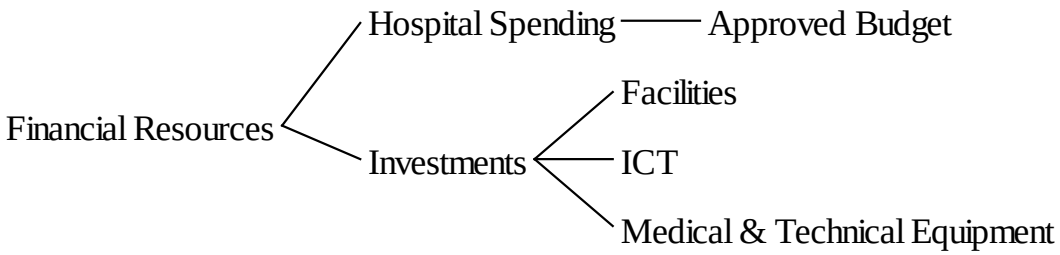
Causal Links

In our model, *Financial Resources* is a function of the variable: *Approved Budget*.

Hospital Spending —— Approved Budget —— Financial Resources

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Financial Resources* :

-increase as the Approved Hospital Budget increases, because the funding of greek Public Hospitals comes mainly from the state, and is limited to the amount of the approved annual budget devoted to them by the ministry of health.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that increased *Financial Resources* lead to the:

-increase of *Hospital Spending*, because the more the *Financial Resources* that hospital managers have in their disposition, the more they are motivated to spend. This happens because the main source of *Financial Resources* is the annual budget, and at the end of the year any remains of the budget just get lost; they do not pass from one fiscal year to the next. Thus, the more the *Financial Resources* that hospital managers have in their disposition, the more they are motivated to spend.

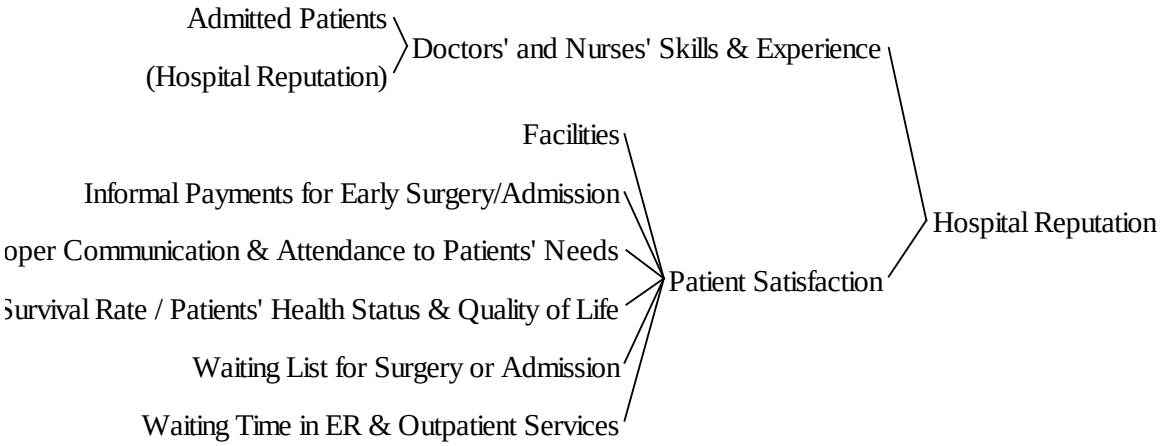
-increase of *Investments*. This is because the more the *Financial Resources* that hospital managers have in their disposition, the greater the part that will remain for *Investments* after covering first the most essential needs in non-durable goods (i.e., medicine, materials, etc) and services (i.e.,cleaning services).

19. *Hospital Reputation*

By *Hospital Reputation* participants mean the perception of the hospital's overall level of quality and safety which is spread by word of mouth and established in society, reflecting the quality of services and the level of safety that this hospital provides in respect to other hospitals of the same kind.

Causal Links

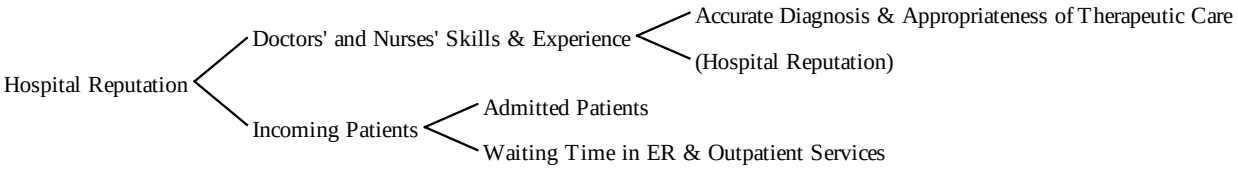
In our model, *Hospital Reputation* is a function of two other variables: *Doctors' and Nurses' Skills & Experience*; and *Patient Satisfaction*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Hospital Reputation* :

-increases as the *Doctors' and Nurses' Skills & Experience* increases. This is because almost all public hospitals have the same *Facilities* thus patients in Greece most of the time choose a doctor - not a hospital - for an important surgery or the treatment of a chronic disease, and they choose based on the doctor's reputation which is spread through word-of-mouth. The reputation of the doctors' skills and experience, thus, is what attracts patients at the hospital, and in the long term it also builds on the *Hospital Reputation* through the word of mouth.

-increases as the *Patient Satisfaction* increases. This is because patients who are satisfied from their experience and treatment at a hospital are likely to return there for a future treatment regarding themselves or their family members, as well as to express this satisfaction to their contacts and spread this good opinion through word of mouth, affecting the *Hospital Reputation* positively.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that a good *Hospital Reputation* leads to the:

-increase of *Doctors' and Nurses' Skills & Experience*. This is because when a hospital has a good reputation, high quality doctors are attracted to come and work with the other considerably good doctors of the hospital, bringing their education, skills & experience to the Hospital assets.

-increase of the rate of *Incoming Patients*. Obviously, a hospital with a good reputation is more likely to be chosen by patients who have no other specific preferences (i.e, preferences for a specific doctor, in which case

they are obliged to visit the hospital where this doctor works and be treated there) for their routine controls or for a minor surgery or treatment.

20. *Hospital Spending*

By *Hospital Spending* participants mean the total amount of money spent in one fiscal year for the supply of all kinds of hospital services and goods (durable and non-durable goods) which are borne by the hospital budget.

Explanations

This variable does not include hospital expenses which are not borne by the hospital budget but are directly paid by the Ministry of Health or other government entities or NGOs (e.g., the wages of the regular employees, who are directly paid by the central government; medical equipment acquired through donation or charity, etc).

Causal Links

In our model, *Hospital Spending* is a function of the variable: *Financial Resources*

Approved Budget —— Financial Resources —— Hospital Spending

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Hospital Spending* :

-increases as the *Financial Resources* increase, because the more the *Financial Resources* that hospital managers have in their disposition, the more they are motivated to spend. This happens because the main source of *Financial Resources* is the annual budget, and at the end of the year any remains of the budget just get lost; they do not pass from one fiscal year to the next. Thus, the more the *Financial Resources* that hospital managers have in their disposition, the more they are motivated to spend.

Hospital Spending —— Approved Budget —— Financial Resources

As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that increased *Hospital Spending* leads to the:

-increase of the *Approved Budget* in the long term, and the other way around (decreased *Hospital Spending* leads to the decrease of the *Approved Budget* in the long term). This happens because of the current policy of the Ministry of Health, according to which the budget of the next fiscal year is issued according to the past year's spending.

21. *ICT*

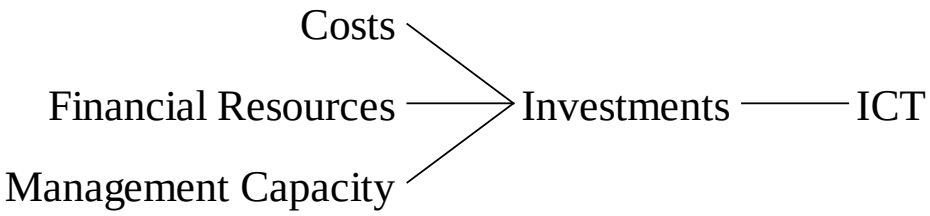
By *ICT* which stands for *Information and Communications Technology* our participants mean all kinds of Information and Communication technology infrastructure installed in the hospital to support any of the activities of the doctors, nurses, technical and administrative staff, including software (i.e., ERP systems, programs, applications, databases, etc,) and hardware (i.e., computers, servers, scanners and printers, etc.).

Explanations

Participants exclude from this variable the *Medical & Technical Equipment* (biomedical, medical and technical/mechanical equipment and machinery), as this is described by another variable named "*Medical & Technical Equipment*".

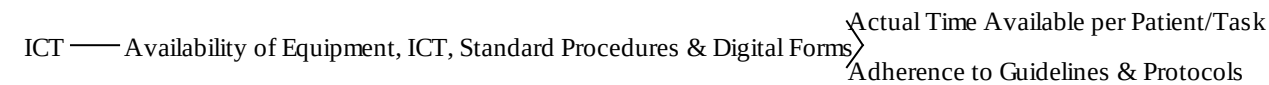
Causal Links

In our model, *ICT* is a function of the variable: *Investments*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *ICT*:

-increase as the *Investments* increase. The more the managerial and *Financial Resources* allocated to *Investments* in *ICT*, the more *ICT* software and hardware will be bought and installed.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that advanced *ICT* leads to the:

- increase of the variable *Availability of Equipment, ICT, Standard Procedures & Digital Forms*, as more *ICT* software and hardware will be in place to be used by the staff, making the administrative work and procedures faster and easier.

22. *Incoming Patients*

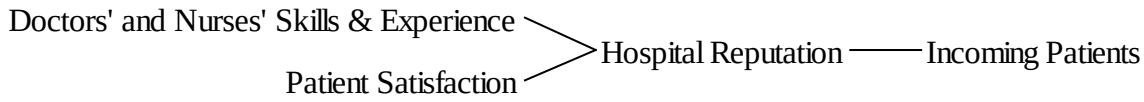
By *Incoming Patients* our participants mean the rate at which people are reaching the Emergency Department or the outpatients services of the hospital in order to be examined.

Explanations

This includes not only the patients who physically reach the Emergency Department (urgent cases), but also the patients who have called and booked an appointment at the outpatient services of the hospital (non urgent cases).

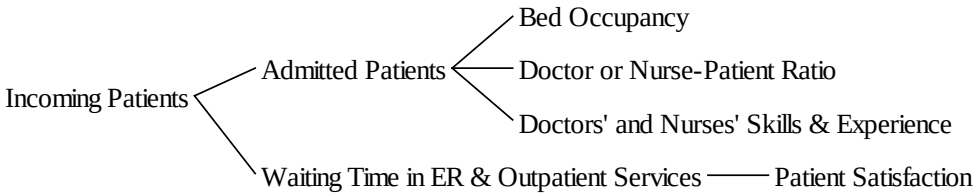
Causal Links

In our model, *Incoming Patients* is a function of the variable: *Hospital Reputation*



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the rate of *Incoming Patients* :

-increases as the *Hospital Reputation* increases. Obviously, a hospital with a good reputation is more likely to be chosen by patients for their routine controls or for a minor surgery or treatment.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that a high rate of *Incoming Patients* leads to the:

-increase of the number of *Admitted Patients*. This is because the more the *Incoming Patients*, the more will be the scheduled admissions, and the more will be the *Admitted Patients*.

-increase of the *Waiting Time in ER & Outpatient Services*. This is because the more the *Incoming Patients* at a certain period (e.g., a day in the ER), the more work for a fixed number of nurses and doctors will it be and – since they cannot all together be examined at once – the more they will need to wait. This applies not only to waiting in the Emergency Room (where patients might need to wait for many hours or days to be examined) but

also to the outpatient services of the hospital, where patients call in advance and book an appointment and might need to wait for months or even year(s) for the first appointment available.

23. *Informal Payments for early Surgery/Admission*

Definition

Informal Payments for early Surgery/Admission are, according to our participants, the rate of patients' out-of-pocket, informal payments to public hospital doctors for scheduling their surgery or admission earlier, in order for them to avoid the long waiting time on the list.

Explanations

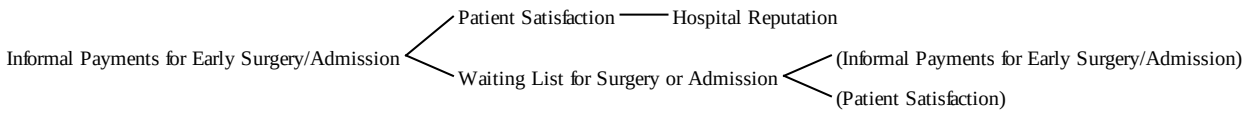
Since priority over the waiting list is given only to urgent cases, those patients get admitted in the hospital through the Emergency Department (ER) by getting characterised as "urgent cases", in order to get priority and avoid waiting on the list for surgery or admission in a specialised unit or department. Our GMB participants called this phenomenon "the suitcase effect" as those patients arrive in the ER with their suitcase, ready to be admitted.

Causal Links

In our model, *Informal Payments for early Surgery/Admission* is a function of the variable: *Waiting List for Surgery or Admission*.

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the rate of *Informal Payments for early Surgery/Admission*:

-increases as the *Waiting List for Surgery or Admission* increases. This happens because, according to our participants, most of the patients do not like to wait long times for having an elective surgery or a necessary treatment, but most importantly because - depending also on the severity of their condition - they might feel that their health will deteriorate if they wait. Thus, they commit to paying the doctors out-of-pocket money, thinking that they will not get timely and appropriate treatment unless they do it.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Informal Payments for early Surgery/Admission* leads to the:

-increase of the *Waiting List for Surgery or Admission*. This is logical, as before calling a patient on the waiting list to be admitted for a surgery, transplant or ICU, administrative staff needs to make sure that there are surgical banks as well as beds available in ICU and at the corresponding clinic. If some patients are characterised as "urgent cases" and are being given priority after giving informal payments to doctors, then all the patients on the waiting list will have to wait more time than otherwise and, in the meanwhile, more patients are being placed on the waiting list, making it even bigger and increasing the average waiting time for all the patients on the list.

-decrease of *Patient Satisfaction*, which is quite logical as patients do not like being forced to pay out-of-pocket money for getting access to the public healthcare services which are supposed to be free of charge.

24. *Investments*

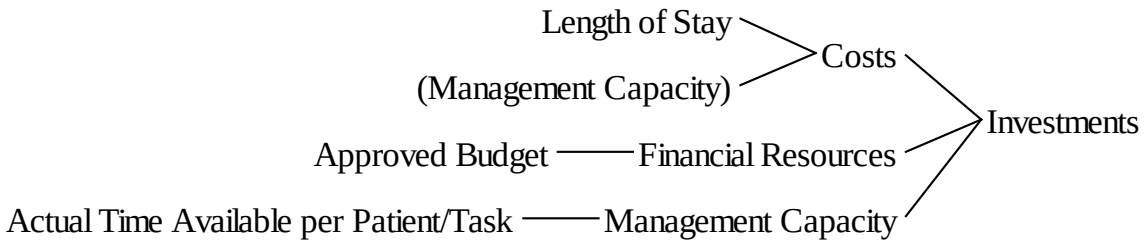
As *Investments* our participants intend the expenses made by the hospital in one fiscal year for the supply of durable goods which are borne by the hospital budget, such as advancements in *Facilities*, equipment and *ICT*.

Explanations

The expenses for the supply of all kinds of hospital services and non-durable goods which are borne by the hospital budget are described by a different variable called "*Costs*" (i.e., medicine, materials, cleaning services, etc). Furthermore, the variable *Investments* does not include any expenses for *Investments* which are not borne by the hospital budget (i.e., expenses directly paid by the Ministry of Health or other government entities or NGOs, such as equipment acquired through donation or charity, for example).

Causal Links

In our model, *Investments* is a function of three other variables: *Management Capacity*; *Costs*; and *Financial Resources*.

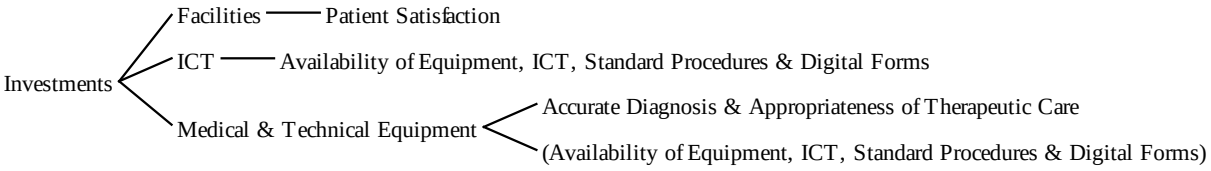


As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Investments* :

-increase as the *Financial Resources* increase. This is because the more the *Financial Resources* that hospital managers have in their disposition, the greater the part that will remain for *Investments* after covering first the most essential needs in non-durable goods (i.e., medicine, materials, etc) and services (i.e.,cleaning services).

-increase as the *Management Capacity* increases. This is because even if there are funds available for *Investments*, no *Investments* can be done without sufficient *Management Capacity*, as the procedures of supply management in public hospitals involve a lot of bureaucracy and know-how by department managers and the administrative personnel.

-decrease as the *Costs* increase. This is because the higher the *Costs* for covering the most essential needs in non-durable goods (i.e., medicine, materials, etc) and services (i.e.,cleaning services), the less the *Financial Resources* that will remain for *Investments*.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Investments* lead to the:

-increase of *Facilities*. The more the *Investments* on physical *Facilities*, the more and the better the physical *Facilities* will be.

-increase of *Medical & Technical Equipment*. The more the *Investments* on Equipment, the more modern and advanced the hospital's *Medical & Technical Equipment* will be.

-increase of *ICT* . The more the *Investments* in *ICT*, the better and the more advanced and powerful the *ICT* infrastructure will be.

25. *Length of Stay*

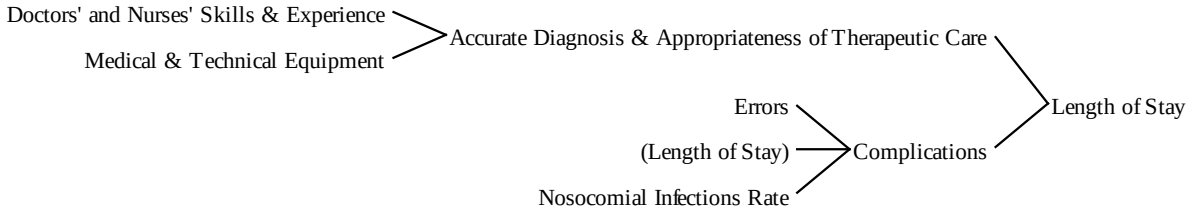
The *Length of Stay* is, according to our participants, the time period (counted in days) that a patient stayed admitted in the hospital (i.e., from the day he/she was admitted until the day he/she got discharged or died).

Explanations

The *Length of Stay*, thus, does not include neither the waiting time that the patient might have waited in the Emergency Department or Outpatient Services before getting examined, nor the time that the patient was being examined by the hospital doctors. Furthermore, it does not include the time that -after being examined and diagnosed- the patients might have waited on a waiting list before being admitted for surgery, ICU or another operation or treatment.

Causal Links

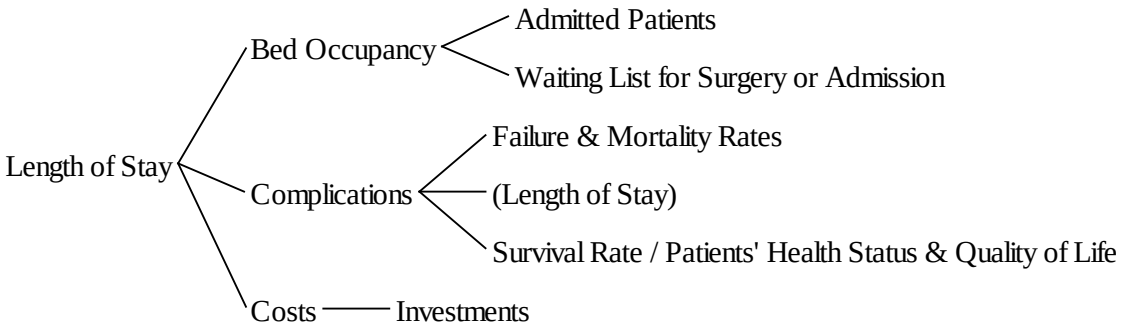
In our model, *Length of Stay* is a function of two other variables: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; and *Complications*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the *Length of Stay*:

-decreases as the *Accurate Diagnosis & Appropriateness of Therapeutic Care* increases, because getting the right diagnosis means that patients are provided with the right treatment for their condition right away, which means that they will get better soon and will be dismissed earlier. When the diagnosis is wrong, patients do not respond to the treatment and need to stay more in the hospital in order to run more screenings and examination and come to a better diagnosis, before starting another treatment.

-increases as the *Complications* increase. This is because *Complications* deteriorate the patient's health state and oblige him/her to stay more time admitted until he/she recovers.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that a high *Length of Stay* leads to the:

-increase of *Complications*. This is because *Length of Stay* augments the chances that *Complications* occur: the more time the inpatient is being treated, the more become the chances that he/she gets a nosocomial infection or that he/she becomes subject to an error of the medical staff.

-increase of *Costs*, This is because longer stay means usage of more materials and medication, more diagnostic tests and biochemical examinations, all of which create extra cost per patient for the hospital, than there would be otherwise.

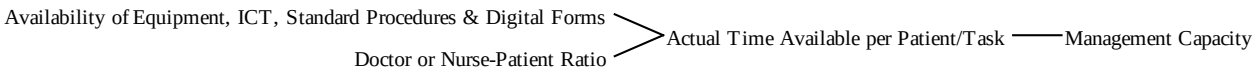
-increase of *Bed Occupancy*. This is because *Bed Occupancy* is a rate which gets higher when many beds are covered for longer time. Thus, the higher the stay, the longer the period that the bed is covered by the patient and the higher the *Bed Occupancy* rate.

26. *Management Capacity*

Management Capacity is, according to our participants, the level of management competencies, management support systems and working environment / procedural improvements that the supervisors and managers of departments (i.e., the administrative managers and the nurses and doctors who are supervisors or managers of their department or unit) have built or achieved.

Causal Links

In our model, *Management Capacity* is a function of the variable *Actual Time Available per Patient/Task*.



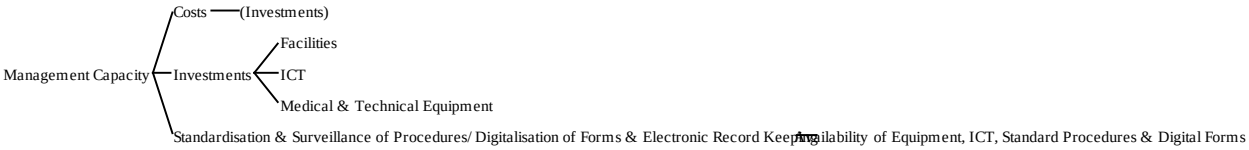
As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Management Capacity* :

-increases as the *Actual Time Available per Patient/Task* increases. This is because the managers' capacity to fulfil their long-term management duties depends on the part of the actual time that they have available during their shift to devote to those management tasks. When their time is mostly spent on administrative and clinical

duties (which are usually more urgent and more short-term and present-oriented), the time left for management duties (which are usually less urgent and more long-term and future-oriented) decreases and they are not able to build *Management Capacity* in the long term. More specifically:

Doctors and nurses who are supervisors or managers of their department in Greek Public Hospitals have clinical duties, administrative (short-term) duties and management (long-term) responsibilities, with the priority being given to the urgent clinical and administrative tasks which are related to the patients treatment and safety. When staff is overwhelmed by the limited actual time available, supervisors need to devote most of their work time doing clinical and administrative work, such as: helping in patients treatment, supporting staff, trying to make the shifts schedule as good as possible for all nurses and doctors, resolving conflicts and other problems that occur because of the limited actual time available. In this way, the time that doctors and nurses with a supervising role have available during their shift to focus on long-term management duties (i.e., *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*; Surveillance of the increase of the *Adherence to Guidelines & Protocols*; Quality and safety controls, etc) decreases.

The same thing applies to the managers and supervisors of the administrative personnel. During their 8-hours shift, they also have both operational (short-term) and strategic (long-term) responsibilities and goals, with the priority being given to the everyday, operational tasks. When staff is overwhelmed by the limited actual time available, supervisors need to devote most of their time doing operational (short-term) tasks, such as: reporting on problems; supporting staff; substituting missing employees; resolving conflicts and other problems that occur because of the limited actual time available. In this way, the time that administrative personnel with a supervising role have available during their shift to focus on strategic (long-term) work (i.e., *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*) decreases.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that increased *Management Capacity* leads to the:

-increase of *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*. This is because breaking down guidelines and protocols into steps of Standard Procedures & Duties requires adequate management competencies and specific, up-to-date knowledge. Furthermore, digitalising and including those forms in the information system in a way that registration and treatment procedures can be easily accessed by many departments (without violating privacy issues), and in a way that inserting and communicating data will become easier and less time consuming for users, needs a lot of work from the administrative and IT personnel of the hospital.

-increase of *Investments*. This is because the procedures of supplies management in public hospitals involve a lot of bureaucracy, and require specific knowledge and many work-hours from management personnel for the specification of the technical requirements of the investment, which is also subject to legal and other administrative restrictions. *Management Capacity* here refers to the competencies of the department managers to quickly identify and specify needs, and then absorb funds accordingly.

-decrease of *Costs* in the long run. This is because increased *Management Capacity* of the permanent employees of the hospital would eliminate the need for extra personnel (i.e., personnel hired under fixed-term contracts of employment to help with the management responsibilities of the hospital managers that are not fulfilled) that is paid from the *Approved Budget*, creating one of the biggest sources of cost for the hospital.

27. *Medical & Technical Equipment*

Medical & Technical Equipment is, according to the participant stakeholders of our GMB sessions, the sum of all the biomedical, medical and technical/mechanical equipment and machinery which belongs to the hospital clinics and outpatient services.

Explanations

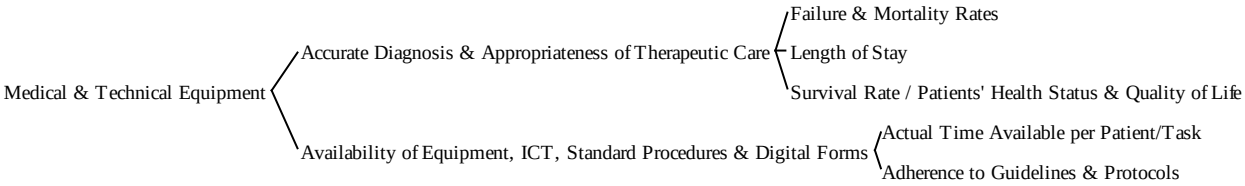
Participants exclude from this category the Information and Communication technology infrastructure installed in the hospital including software (i.e., ERP systems, programs, applications, databases, etc,) and hardware (i.e., computers, servers, scanners and printers, etc.), as this is described by another variable named *ICT*, which stands for Information and Communications Technology.

Causal Links

In our model, *Medical & Technical Equipment* is a function of the variable: *Investments*.

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Medical & Technical Equipment* :

-increases as the *Investments* increase. The more the managerial and *Financial Resources* allocated to *Investments* in *Medical & Technical Equipment*, , the more advanced *Medical & Technical Equipment* will be bought and installed.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that modern and advanced *Medical & Technical Equipment* leads to:

- more accurate diagnosis and more appropriate therapeutic care. This is because the more modern and more up-to-date the medical and biomedical equipment of a hospital is, the more tools the doctors and nurses have to diagnose patients accurately and treat them effectively and safely. Biomedical equipment technology is continuously being invented and improved and, as obvious, older machines are usually more invasive, less accurate and safe and come with limited capabilities and capacity in respect to more modern ones. technical equipment is associated with patients' safety during treatment.

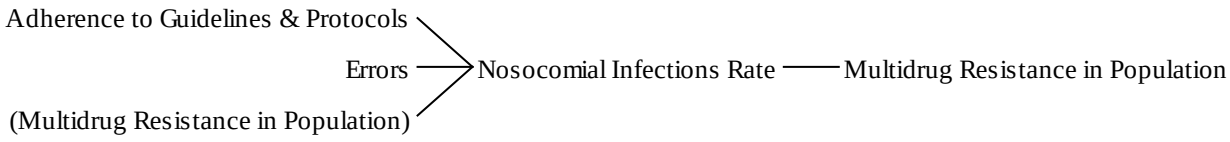
-increase of the variable *Availability of Equipment, ICT, Standard Procedures & Digital Forms*, as more *Medical & Technical Equipment* will be in place to be used by the staff, making the work of doctors, nurses and the supporting technical staff faster, easier, safer, more effective and efficient.

28. *Multidrug Resistance in Population*

By *Multidrug Resistance in Population*, our participants mean the level at which multidrug-resistant bacteria (i.e., bacteria which are resistant to more than one antibiotic) are prevalent in the general population in Greece.

Causal Links

In our model, *Multidrug Resistance in Population* is a function of the variable: *Nosocomial Infections Rate*)



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Multidrug Resistance in Population*:

-increases as the *Nosocomial Infections Rate* increases. This is because the higher the *Nosocomial Infections Rate*, the more patients will be infected by resistant pathogens and – the ones who will not die – will be colonised and will be discharged. The more the colonised patients in the community, the higher the Multidrug Resistance in the general population.

As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Multidrug Resistance in Population* leads to the:

-increase of *Nosocomial Infections Rate*. This is because the higher the Multidrug Resistance in the general population, the more the colonised patients that will be admitted in the hospital and the more the possibilities that they will infect other patients there, pushing the *Nosocomial Infections Rate* higher than otherwise.

29. *Nosocomial Infections Rate*

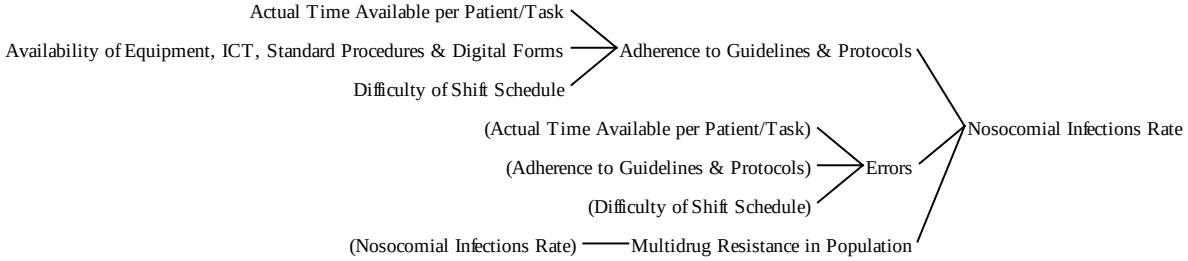
By *Nosocomial Infections Rate* our GMB participants mean the actual rate of infections (potentially of multidrug resistant bacteria) acquired by the patients while being hospitalised, or by their carers and the hospital staff.

Explanations

Although there are some indicators that are used by hospitals, the exact rate is impossible to be directly, accurately and promptly estimated and monitored.

Causal Links

In our model, *Nosocomial Infections Rate* is a function of three other variables: *Adherence to Guidelines & Protocols*; *Multidrug Resistance in Population*; and *Errors*.

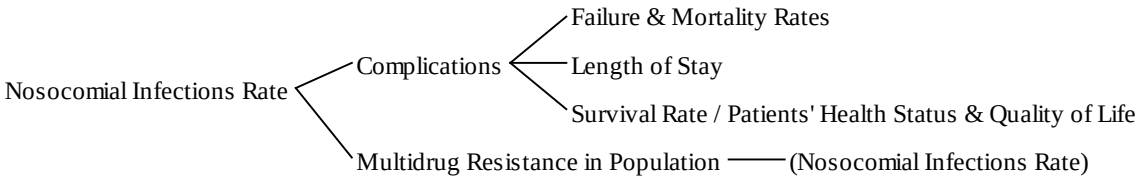


As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Nosocomial Infections Rate*:

-increases as the *Multidrug Resistance in Population* increases. This is because the higher the Multidrug Resistance in the general population, the more the colonised patients that will be admitted in the hospital and the more the possibilities that they will infect other patients there, pushing the *Nosocomial Infections Rate* higher than otherwise.

-increases as the *Errors* increase. This is because some of the medical and nursing staff's *Errors* (e.g., improper sterilization of catheters and surgical equipment) directly cause infections (i.e., urinary tract infections and surgical site infections respectively) to the patients.

-decreases as the *Adherence to Guidelines & Protocols* increases. This is because adherence to guidelines, measures, nursing and medical protocols ensures among others Appropriate Patients handling, appropriate Material & Waste Management, adequate staff's vaccination coverage, and other measures and precautions which in turn limit the spread of *Nosocomial Infections Rate*.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that a high *Nosocomial Infections Rate* leads to the :

-increase of *Complications*. This is because the higher the Hospital's *Nosocomial Infections Rate*, the more are the chances that a patient gets infected in a given time period.

-increase of *Multidrug Resistance in Population*. This is because the higher the *Nosocomial Infections Rate*, the more patients will be infected by resistant pathogens and – the ones who will not die – will be colonised and will be discharged. The more the colonised patients in the community, the higher the Multidrug Resistance in the general population.

30. *Patient Satisfaction*

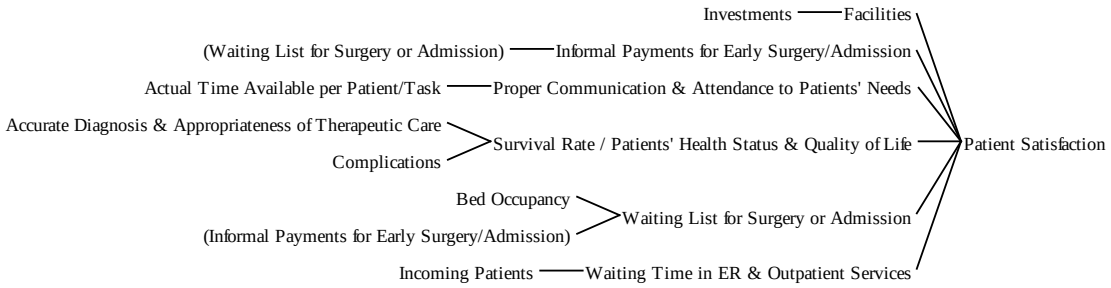
*Patient Satisfaction*is , according to our GMB participants, the level at which patients are satisfied with the overall experience and outcome of their hospital treatment.

Explanations

In our model, this level can be from 0 to 1, where 0 equals to a very negative experience and/or outcome of the disease, and 1 equals to a very positive experience and/or outcome of the disease.

Causal Links

In our model, *Patient Satisfaction* is a function of six other variables: *Facilities*; *Informal Payments for early Surgery/Admission*; *Proper Communication & Attendance to Patients' Needs*; *Survival Rate / Patients' Health Status & Quality of Life*; *Waiting List for Surgery or Admission*; and *Waiting Time in ER & Outpatient Services*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Patient Satisfaction*:

-increases as the *Facilities* increase. Physical *Facilities* (e.g., modern and nicely decorated patient rooms, restaurants, outdoor play areas for children, furniture, etc) and other amenities provided by the hospital (e.g., privacy and cleanness in rooms, toilets and common spaces; internet access for patients and guests, etc) and other similar amenities related to the physical *Facilities* of the hospital and the comfort that the hospital *Facilities* provides to patients are very important aspects of the patients' hospitalisation experience and is largely what they have in mind when filling in Patient satisfaction questionnaires.

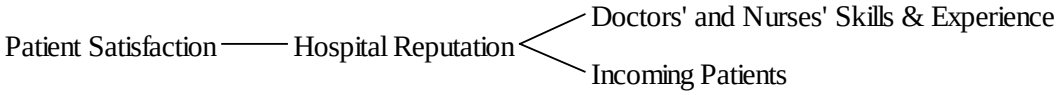
-increases as the *Proper Communication & Attendance to Patients' Needs* increases. A polite behaviour, a good communication and the attendance to their needs by the medical and nursing staff are largely what patients perceive as "good hospital treatment" and is what they have in mind when evaluating their hospitalisation experience in the Patient satisfaction questionnaires. This happens because patients are not able – unless they are doctors themselves - to evaluate the appropriateness of treatment and diagnosis, or the medical and scientific integrity of doctors and nurses.

-increases as the *Survival Rate / Patients' Health Status & Quality of Life* increases. Although patients cannot evaluate the appropriateness of treatment and diagnosis, they can and they do evaluate the outcome of the treatment and their quality of life after discharge (i.e., their overall level of health, pain and functionality after treatment in comparison to before treatment).

-decreases as the *Waiting List for Surgery or Admission* increases because, according to our participants, most of the patients do not like to wait long times for having an elective surgery or a necessary treatment, but most importantly because - depending also on the severity of their condition - they might feel that their health will deteriorate if they wait.

-decreases as the *Waiting Time in ER & Outpatient Services* increases, which is quite logical as nobody likes long queues and long waiting times to be examined. Especially when it comes to being in the ER for an emergency, waiting can be fatal.

-decreases as the *Informal Payments for early Surgery/Admission* increase, which is quite logical as patients do not like being forced to pay out-of-pocket money for getting access to the public healthcare services which are supposed to be free of charge.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that high *Patient Satisfaction* leads to the:

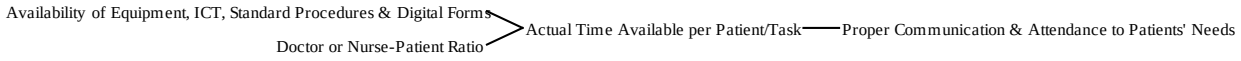
-increase of the *Hospital Reputation*. This is because patients who are satisfied from their experience and treatment at a hospital are likely to return there for a future treatment regarding themselves or their family members, as well as to express this satisfaction to their contacts and spread this good opinion through word of mouth, affecting the *Hospital Reputation* positively.

31. *Proper Communication & Attendance to Patients' Needs*

Proper Communication & Attendance to Patients' Needs is, according to our GMB participants, the level at which doctors, nurses and healthcare staff timely, promptly and adequately respond to the *Admitted Patients*' needs during their stay and adequately communicate with them regarding their diagnosis and treatment.

Causal Links

In our model, *Proper Communication & Attendance to Patients' Needs* is a function of the variable: *Actual Time Available per Patient/Task*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Proper Communication & Attendance to Patients' Needs* :

-increases as the *Actual Time Available per Patient/Task* increases. This is because the more the net time that doctors and nurses have available to dedicate to each patient, the more "present" and "responsive" nurses and medical staff will be to each patients' needs and the more the time they will spend with each one of them, answering their questions and giving them information and instructions regarding their condition, treatment and personal care.

As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Proper Communication & Attendance to Patients' Needs* leads to the:

-increase of *Patient Satisfaction*. A polite behaviour, a good communication and the attendance to their needs by the medical and nursing staff are largely what patients perceive as "good hospital treatment" and is what they have in mind when evaluating their hospitalisation experience in the Patient satisfaction questionnaires. This happens because patients are not able – unless they are doctors themselves - to evaluate the appropriateness of treatment and diagnosis, or the medical and scientific integrity of doctors and nurses.

32. *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*

Standardisation of Procedures is, according to our GMB participants, the rate at which the managers of the hospital's administrative, nursing and medical units and departments are continuously getting informed and updated on the national and international guidelines and protocols regarding quality and safety during the delivery of care, and are "translating" those guidelines and protocols into easy, simple and standard procedures that their subordinates have to follow during the delivery of their (medical or nursing) practice.

Surveillance of Procedures is, according to our GMB participants, the rate at which the managers of the hospital's administrative, nursing and medical units and departments are inspecting and surveilling the adherence to those standard procedures by their subordinates.

Digitalisation of Procedures and Forms is, according to our GMB participants, the rate at which the managers of the hospital's administrative, nursing and medical units and departments are working towards modernising and digitising the administrative procedures and the forms of their department/unit with the support of *ICT*, by creating digital nursing and medical forms - hopefully integrated into the hospital's information system (ERP) - in order for the patients' information to be easily, accurately and quickly filled in, signed and distributed in other units and departments of the hospital.

Causal Links

In our model, *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping* is a function of the variable: *Management Capacity*.

Actual Time Available per Patient/Task ── Management Capacity ── Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping*:

-increases as the *Management Capacity* increases. This is because breaking down guidelines and protocols into steps of Standard Procedures & Duties requires adequate management competencies and specific, up-to-date knowledge.

As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that *Standardisation & Surveillance of Procedures/ Digitalisation of Forms & Electronic Record Keeping* leads to the:

-increase of the *Availability of Equipment, ICT, Standard Procedures & Digital Forms*. This is because the more the guidelines and protocols that are "translated" into easy, simple and standard procedures, the greater the availability of those standard procedures for the staff to follow them during the delivery of their (medical or nursing) practice and for the managers to surveil them.

33. *Survival Rate / Patients' Health Status & Quality of Life*

Survival Rate is, according to our GMB participants, the rate at which hospitalised patients survive and get discharged from the hospital alive after their treatment.

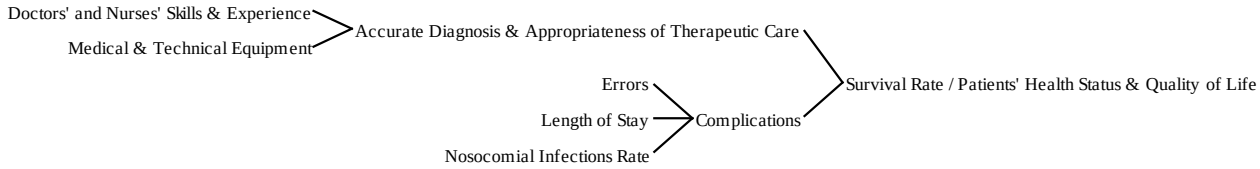
Patients' Health Status & Quality of Life is, for our GMB participants, an indicator of the level of the patients' health and quality of life after their hospital treatment, in respect to a reference level of health and quality of life based on their age and condition.

Explanations

In our model, this level of the patients' health and quality of life after their hospital treatment can be from 0 to 1, where 1 equals to the optimal health and quality of life based on their age and condition and 0 equals to no self-care capacity.

Causal Links

In our model, *Survival Rate / Patients' Health Status & Quality of Life* is a function of two other variables: *Accurate Diagnosis & Appropriateness of Therapeutic Care*; and *Complications*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that the *Survival Rate / Patients' Health Status & Quality of Life*:

-decrease as the *Complications* increase. This is because the more the *Complications* during the treatment, the more compromised the immune system of the patient gets and the more are his/her chances of death. Furthermore, a compromised immune system makes it easier for the patient to get infected by contagious pathogens in the hospital environment and raises even more his chances of failure of the treatment or death.

-increase as the *Accurate Diagnosis & Appropriateness of Therapeutic Care* increases. This is because the more Accurate the Diagnosis and - subsequently - the more appropriate the treatment provided for his condition, the better for the patient's outcome of the disease and the more his/her chances to recover and to survive.

Survival Rate / Patients' Health Status & Quality of Life - Patient Satisfaction — Hospital Reputation

As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that the *Survival Rate / Patients' Health Status & Quality of Life* leads to the:

-increase of *Patient Satisfaction*. Although patients cannot evaluate the appropriateness of treatment and diagnosis, they can and they do evaluate the outcome of the treatment and their quality of life after discharge (i.e., their overall level of health, pain and functionality after treatment in comparison to before treatment).

34. *Waiting List for Surgery or Admission*

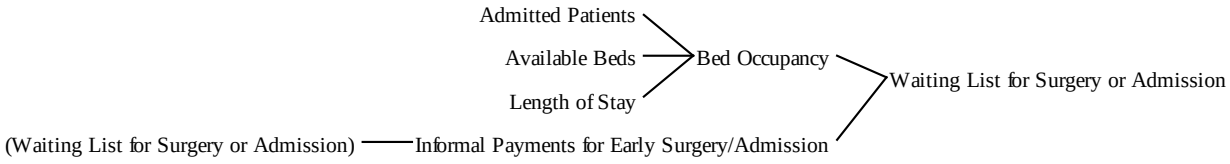
Waiting List for Surgery or Admission is, according to our GMB participants, the average time that patients -after being examined and diagnosed- have to wait before getting admitted for a Surgery or Admission in one of the hospital clinics or the ICU.

Explanations

The *Waiting List for Surgery or Admission*, thus, does not include neither the waiting time that the patient might have waited in the Emergency Department or Outpatient Services before getting examined, nor the time that the patient was being examined by the hospital doctors.

Causal Links

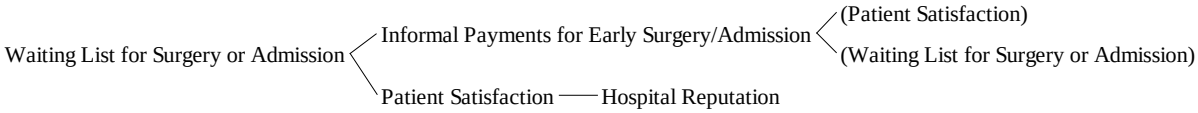
In our model, *Waiting List for Surgery or Admission* is a function of two other variables: *Bed Occupancy*; and *Informal Payments for early Surgery/Admission*.



As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Waiting List for Surgery or Admission* :

-increases as the *Bed Occupancy* increases. This is logical, as before calling a patient from the waiting list to be admitted for a surgery, transplant or ICU, administrative staff needs to make sure that there are surgical banks as well as beds available in ICU and at the corresponding clinic. If all the *Available Beds* are covered, all patients on the waiting list have to wait more time and, in the meanwhile, more patients are being placed on the waiting list, making it even bigger and increasing the average waiting time for all the patients on the list.

-increases as the *Informal Payments for early Surgery/Admission* increases. This is logical, as before calling a patient on the waiting list to be admitted for a surgery, transplant or ICU, administrative staff needs to make sure that there are surgical banks as well as beds available in ICU and at the corresponding clinic. If some patients are characterised as "urgent cases" and are being given priority after giving informal payments to doctors, then all the patients on the waiting list will have to wait more time than otherwise and, in the meanwhile, more patients are being placed on the waiting list, making it even bigger and increasing the average waiting time for all the patients on the list.



As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that longer *Waiting List for Surgery or Admission* leads to the:

-increase of the *Informal Payments for early Surgery/Admission*. This happens because, according to our participants, most of the patients do not like to wait long times for having an elective surgery or a necessary treatment, but most importantly because - depending also on the severity of their condition - they might feel that their health will deteriorate if they wait. Thus, they commit to paying the doctors out-of-pocket money, thinking that they will not get timely and appropriate treatment unless they do it.

-decrease of *Patient Satisfaction*, because, according to our participants, most of the patients do not like to wait long times for having an elective surgery or a necessary treatment, but most importantly because - depending also on the severity of their condition - they might feel that their health will deteriorate if they wait.

35. *Waiting Time in ER & Outpatient Services*

Waiting Time in ER & Outpatient Services is, according to our GMB participants, the average time that patients have to wait before getting examined in the Emergency Room or in the Outpatient Services of the hospital.

Explanations

In the Emergency Room the waiting time varies from some minutes to several hours or days, while in the outpatient services of the hospital patients call in advance and book an appointment and might need to wait for months or even year(s) for the first appointment available.

Causal Links

In our model, *Waiting Time in ER & Outpatient Services* is a function of the variable: *Incoming Patients*.

Hospital Reputation —— Incoming Patients —— Waiting Time in ER & Outpatient Services

As shown on the Causes Tree above, the participant stakeholders of our GMB sessions agree that *Waiting Time in ER & Outpatient Services* :

-increases as the Number of *Incoming Patients* increases - especially in the ER. This is because the more the *Incoming Patients* at a certain period (e.g., a day in the ER), the more work for a fixed number of nurses and doctors will it be and – since they cannot all together be examined at once – the more they will need to wait. This applies not only to waiting in the Emergency Room (where patients might need to wait for many hours or days to be examined) but also to the outpatient services of the hospital, where patients call in advance and book an appointment and might need to wait for months or even year(s) for the first appointment available.

Waiting Time in ER & Outpatient Services —— Patient Satisfaction —— Hospital Reputation

As shown on the Uses Tree above, the participant stakeholders of our GMB sessions agree that longer *Waiting Time in ER & Outpatient Services* leads to the:

-decrease of *Patient Satisfaction*, which is quite logical as nobody likes long queues and long waiting times to be examined. Especially when it comes to being in the ER for an emergency, waiting can be fatal.

Appendix 25: The Scale of the Research Project - Main and Secondary Activities undertaken

1.TOPIC FINDING

Read about strategies for finding a topic; Research possible topics; Check out the topic area; Assess feasibility of research topic, and relevance with the PhD Objectives and with the researcher's skills; Brainstorm precise Research Questions (RQs); Meet with supervisor to discuss the RQs; Plan the next stages.

2.LITERATURE REVIEW

-Preliminary Literature Review: Attendance of specialised courses on Public Management at the University of Palermo, Italy; Read text books and journal articles; Critique the sources; Select material for the final Literature Review; Prepare a summary of the Literature Review for the research proposal.

-Intermediate Literature Review: Attendance of specialised courses on Performance Measurement at the University of Palermo, Italy; Read text books and journal articles; Synthesise theories and create a preliminary Research Hypothesis and Conceptual Model; Select material for the final Literature Review; Inform the summary of the Literature Review for the research proposal; Make amendments as the research progresses.

-Final Literature Review: Read more recently published journal articles; Finalise the Research Hypothesis and the Conceptual Model; Create Preliminary CLD model derived from the literature review, to be used during the interviews; Select material for the final Literature Review; Inform the summary of the Literature Review for the research proposal; Make amendments as the research progresses; Evaluate all sources in the review; Update the bibliography; Finalise and write up the Literature Review.

3.RESEARCH PROPOSAL DRAFTING

Finalise RQs; Agree the RQs and the scope of research with the tutor; Adapt the Literature Review for the research proposal; Think around methods and methodological decisions; Critique Methodology; Select Methods; Decide sampling and research population; Inform research planning and plan the next stages; Learn how to use the referencing in Word; Finalise the proposal; Agree the Proposal with the tutor.

4.METHODOLOGY LEARNING (THROUGH INTENSE COURSEWORK)

Attendance of specialised courses on System Dynamics at the University of Bergen, Norway; Attendance of specialised courses on Performance Measurement at the University of Palermo, Italy; Attendance of specialised courses on Group Model Building at the University of Nijmegen, The Netherlands; Read textbooks and academic articles on System Dynamics Modeling, Group Model Building and Research Methodology; Critique Methodology and inform methodological decisions; Reflect on the effectiveness of the methods; Update the bibliography and write up the methodology part of this thesis.

5.RESEARCH DESIGN, PLANNING & PREPARATION

RESEARCH PLANNING, LEGAL AUTHORISATIONS, APPROVALS & ETHICS: Investigate and get informed on the legal procedures for research approval and ethics approval; Address ethical issues and prepare ethical statement; Prepare ethics protocol; Prepare the formal request for permission to conduct research inside a Greek hospital, addressing the Hospital's Board of Directors; Prepare the formal request for research approval and Ethics approval, addressing the hospital's Research and Ethics Committee; Inform and finalise research design and planning; Create Gantt chart of the detailed research plan and plan the next stages.

-STAKEHOLDER ANALYSIS, IDENTIFICATION OF CASE HOSPITAL & PREPARATION OF MATERIAL: Undertake a stakeholder analysis to identify which stakeholder groups should participate in each stage of the research; Develop the "Call for participants"; Send out the "call for participants"; Identify the Case Hospital; Submit the formal request for a permission to conduct research to the Hospital's Board of Directors; Submit the formal request for research approval and Ethics approval to the hospital's Research and Ethics Committee; Prepare and submit additional documentation to the Research and Ethics Committee of the hospital; Receive research approval and Ethics approval; Adapt the Preliminary CLD model derived from the literature review, to be used during the interviews; Create the Interview guide; Create the GMB presentation & agenda.

-IDENTIFICATION OF PARTICIPANTS, COMMUNICATIONS & PRACTICAL ARRANGEMENTS FOR THE RESEARCH: Develop the "Telephone contact guide"; Identify potential participants and use the "Telephone contact guide" to recruit them; Establish contact, trust and preliminary agreements with potential participants; Finalise participants and establish dates, times and practicalities of the GMB interviews and GMB sessions; Send out GMB agenda and reminders to participants.

6.DATA COLLECTION (Interviews, GMB sessions)

Documents gathering & initial documents analysis; Inform Interview Guide and GMB presentation with insights from the initial documents analysis; Send out and receive signed informed consents from participants; Carry out preliminary interviews; Inform the preliminary CLD model with insights from the interviews; Carry out Group Model Building sessions; Primary validation of the results; Ensure data is fully collected and secured.

7.DATA ANALYSIS & RESULTS

-Create the *Scoping Model of Hospital Performance* (Divergent CLD version)

-Create the *Conceptual Model of Hospital Performance* (Convergent CLD version);

-Undertake DPM analysis, based on the Convergent version of Hospital Performance CLD;

-Model Analysis & Validation: 1.Direct Structure Tests (Structure-Confirmation Test,Parameter-Confirmation Test, Direct Extreme- Condition Test, Dimensional consistency Test), 2.Indirect Structure Tests (Extreme-Condition Test, Behavior sensitivity Test, Boundary adequacy Test, Phase relationship Test), 3.Behavior Tests (Reference Mode Test);

-Create model stories, Support stories with data, evidence, graphs; Check the clarity and support of the data stories; Derive specific Policy recommendations from the model; Write up the data analysis and results parts of this thesis.

8.THESIS DRAFTING

Write up discussion; Finish writing up previous sections; Add in front, contents, abstract etc; Add contents, indexes etc; Review and improve writing; Send to tutor for corrections; Correct and refine; Submit final draft.

Appendix 26: Risk Assessment, Measures and Precautions undertaken for the protection of participants

In this appendix, our extensive risk assessment, as well as the measures and precautions undertaken based on this risk assessment for the protection of the participants in terms of potential harm, voluntary participation, informed consent, privacy, identity, confidentiality, etc, are analytically presented and analysed. Following Denscombe (2012, pp.128-130), an informal risk assessment was undertaken by the researcher in order to identify and consider during the research design phase any potential harm for the participants and the participating organisation resulting from the research. This informal risk assessment was conducted by means of thinking about a whole range of questions and 'What if ' scenarios in connection with the research proposal and design.

More specifically, the 'What if ' scenarios and questions that our informal risk assessment involved following Denscombe (2012, pp.128-130), are summarised as follows:

1) In respect to potential harm to participants:

-What kinds of harm are reasonably foreseeable? What precautions will be taken to prevent these occurring?

-Has authorization been obtained for access to potential participants?

-What measures will be taken to guarantee the anonymity of participants? Will anonymity be guaranteed in terms of any reported findings from the research?

-What assurances about confidentiality will be given? How will data security be safeguarded? Who will have access to the data files? What assurances can be given about non-disclosure of information to third parties?

-How will the research avoid undue intrusion into personal lives? How will it respect participants' rights to privacy?

-Are there any aspects of the proposed research that might entail a threat to the interests of participants? Have these been described and have they been defended bearing in mind the extent of the potential harm involved?

2) In respect to voluntary participation and informed consent:

-How will consent be obtained? What kind of consent will be required? Will a consent form be used? How will this be administered?

-Will the research require written consent or not?

-When and where will potential participants be provided with a 'participant's information document'?

-Will potential participants be formally notified of their right to withdraw?

-Are there any considerations about equality, fairness, and justice that arise in connection with the selection of participants for the research?

Based on the above risk assessment, the researcher undertook a number of measures and precautions to minimise the risk for participants and assure ethical integrity. Following Denscombe (2012, pp.128-130), those measures can be categorised as follows:

1) Preventing harm:

Research is conducted at the workplace of most participants (i.e., the case hospital), involving some of their co-workers and colleagues and regarding work-related issues. Thus, only some kind of moral or professional harm

could be reasonably anticipated for the participants, stemming from the fact that they will participate in open discussions during the GMB sessions involving work issues. To prevent this from occurring, we designed the research in a way that we first sent a "call for participants" to hospital managers by email.

We contacted the ones who replied to us by telephone, informing them about the research and asking them to act as gatekeepers. As gatekeeper, the interested participant would lead us through snowball sampling to the rest of the participants, and would be the main contact person for the researcher. The researcher would cooperate with the gatekeeper during the selection of participants for the interviews and the GMB sessions, in order to ensure that the participant stakeholders who were selected have already cooperation and relationships between them well-established, and share some kind of minimum commitment to fostering performance in their departments. This would prevent us from involving participants with hidden agendas that would potentially create conflicts of interest during the GMB sessions which could lead to professional harm of some of the rest of the participants or of the organisation as a whole.

Furthermore, in order to prevent any financial harm of the participants or of the organisation as a whole, within the additional documents submitted to the Hospital's Research and Ethics Committee was a statement signed by the researcher stating that the hospital will not be financially burdened in any way by the research study.

2) Respecting privacy:

Once we identified the case hospital through the interest presented by the potential gatekeeper, we first officially submitted a formal request to the Hospital's Board of Directors for permission to conduct research inside the hospital. Because of the sensitive data the research involved, we were asked to submit a formal request for research approval and ethics approval to the hospital's Research and Ethics Committee, providing them with additional documents, in order for them to be able to give an opinion to the Board of Directors. Those documents were submitted on time and both the Scientific Council, acting as a Research and Ethics Committee, and the Board of Directors gave their consent to conduct the research. Thus, the privacy rules of the hospital were respected.

Within those additional documents was the Research proposal, the Ethics Protocol and the Interview guide translated in Greek. Those documents were available upon request to all the participants as well. Also, as mentioned before, we selected the gatekeepers based on their response to a "call for participants", thus based on their personal interest, voluntary participation and informed consent. Then, the gatekeeper would lead us through snowball sampling to other potential participants, who would also be selected based on their response rate to our call, thus based on their personal interest, voluntary participation, free and informed consent.

Furthermore, during the first telephone contact with each participant, as well as in the beginning of the interviews and the GMB sessions, the researcher informed the participants that:

-The data is confidential and anonymous, meaning no names, hospital titles, participant names etc. will be mentioned, and will only be used for research purposes.

-Interviews will be tape-recorded and then analysed only by the interviewer- researcher to inform a model of hospital performance she is preparing. She will be the only person who has access to the interview data. Literal quotations and paraphrasing will be used in order to justify the model building, but any identifiable information

(name, function, position, company title, etc.) will be changed. Participants will receive the final draft of the thesis where literal quotations exist, before submission, and they will have the right to correct or delete any of the quotations that they do not want to be included in the thesis. Only the final text will be included in the thesis, after changes in identifiers and additional corrections of participants.

-You will be asked to sign an informed consent form and a data privacy form. The first one is for me to make sure you agree to participate in this research on your own will, and the second one is for you to make sure that all your personal details, all your sayings and data are safe. It is also very important to remember that even after signing those forms, you can still change your mind and withdraw from participating at any moment, if you feel that you do not want to participate anymore for any reason.

Moreover, during the first telephone contact with each participant, and after explaining a bit more about the research following the telephone contact guide, the researcher gave to them time to think about it and told them that "If you are still interested in participating, we can arrange an appointment (date, time & place) at your convenience for the interview. You can take some time to think about it and let me know", as well as that "even after you agree, you can still change your mind and withdraw from participating at any moment, if you feel that you do not want to participate anymore for any reason". Then, at the beginning of the scheduled interviews and GMB sessions, the researcher checked again with the participants, before getting started that they still wish to participate, by saying to them "I know that when we spoke you agreed to take part in the interview, but I just want to check that you are still ok with it".

In all those ways, we assured that participants were fully informed, fully aware of what they were getting involved in and free to participate voluntarily. Thus, their privacy rights were respected and maintained, and intrusion into their personal lives was avoided.

3) Protecting identities:

Potential risks were found to arise mainly from the nature of the data collected (personal data). Thus, the need for assuring security of collected data, and the need for keeping anonymity when disseminating findings was found as crucial. The researcher developed a plan for minimising those risks and guarantee anonymity, involving actions such as: replacing the name of the hospital by "the hospital" in all the transcripts and documents and informing the research proposal, the interview, the telephone guide and all the materials accordingly, as well as by not revealing the names of the participants in any way.

Furthermore, during the telephone contact as well as in the beginning of the interviews and the GMB sessions, the researcher informed the participants that:

-The data is confidential and anonymous, meaning no names, hospital titles, participant names etc. will be mentioned, and will only be used for research purposes.

-Interviews will be tape-recorded and then analysed only by the interviewer- researcher to inform a model of hospital performance she is preparing. She will be the only person who has access to the interview data. Literal quotations and paraphrasing will be used in order to justify the model building, but any identifiable information (name, function, position, company title, etc.) will be changed.

-Participants will receive the final draft of the thesis where literal quotations exist, before submission, and they will have the right to correct or delete any of the quotations that they do not want to be included in the thesis. Only the final text will be included in the thesis, after changes in identifiers and additional corrections of participants.

Finally, within the additional documents submitted to the Hospital's Research and Ethics Committee there was a statement signed by the researcher stating that the names of the hospital and of the participants will not be exposed while reporting the findings from the research, neither for the writing of the thesis nor for any publications. Those documents were made available to all the participants as well.

4) Gaining consent:

Consent was obtained directly from the potential participants, in physical form. Free and informed consent was required, and a consent form was created and used. During the preparation phase and the preliminary agreements with the participants, a physical consent form was sent to them by email, and they were asked to read it, sign it and return it scanned. Only after the researcher had received the signed form by the potential participant, was he considered as a participant. Participants were informed that, in any case, they can change their mind at any moment and decide to not participate. Then right before the interviews and the GMB sessions, the participants that showed up were again handed out the same consent form and were asked to sign it again, if they still wished to participate in the research and had not changed their minds.

Within the additional documents submitted to the Hospital's Research and Ethics Committee was a University Certificate of Attendance, certifying the attendance of the researcher into a PhD position in the University of Palermo and her research topic. Those documents were made available to all the participants as well, upon request. Furthermore, although the researcher first contacted the gatekeeper and then each participant separately, after all participants were selected the researcher started an open communication via emails with the whole group of participants, in order to send out her credentials and research information, consent forms, privacy forms, material, GMB session agenda, etc, and to organise the dates and time for the GMB sessions with the group. In this way, the details of the researcher and her institution were not only double-checked in advance by the Hospital's Research and Ethics Committee, but also available for participants to verify it online, thus any suspicions of deception or misrepresentation by the researcher were avoided.

5) Respecting confidentiality:

When dealing with personal data, it is important to consider data privacy, data protection and data security issues during all the stages of data management, such as during the research preparation and arrangements, during the data collection, the data analysis and the data storage. Following the guidelines provided by the Radboud University of Nijmegen, The Netherlands[46], we undertook the following measures:

[46] See: https://www.ru.nl/rdm/planning-research/data-management-paragraph/

Regarding Data Privacy[47], the researcher undertook the following measures of data minimisation: the personal data collected was limited to only the data directly and absolutely necessary to achieve the goals of the research project. Thus, the documents and the data collected from the medical records of the hospital's Information System will contain aggregated information in the form of graphs and performance indicators, and not explicit data of medical records and personal data of patients. In this way, the patients will not be identifiable in the data collected. Furthermore, the researcher minimised the amount of personal data collected from the research participants, and this minimum amount of personal data collected from the participants to the interviews and GMB sessions were summarised in the following table. The only identifiable subjects from the data collected for our research are the participants, and all the personal data involved were mentioned only inside this table and nowhere else, in order to ensure anonymity. Finally, as the researcher was the only person who has access to the data files, risks of exposure are minimised.

Name & Last name	Job position	Role in respect to hospital performance	Email	Tel. Number at work	Prefered Dates & Times for communications	Date &Time scheduled for the Interview	Nickname given for the research

Data security refers to the risks that digital data are prone to, like hacking or cyber-attacks, especially when there is a lack of security. In our research, those risks stem from a potential exposure of the email communications with the participants, and of the table above with their personal details. Regarding Data Security[48], the researcher undertook the following measures of data minimization:

-Made exclusive use of the Radboud University email account for all private email communications with participants, as well as the university network drive to store the table with the participants' personal details, and all the documents and statistical records collected from the Hospital. Radboud University suggests that "*while research is ongoing, data is stored on the campus network. Safe and secure storage is guaranteed by the IT security and safety protocols of the campus network. In addition, it is proposed that Surfdrive (for non-personal*

[47] See: https://www.ru.nl/rdm/collecting-data/data-privacy/

[48] See: https://www.ru.nl/rdm/collecting-data/data-security/

data) or the campus network (for (sensitive) personal data) can be used to exchange between researchers during the project. If it is not possible to store the data directly on the campus network, data is stored encrypted on a local device (laptop) and transferred to the campus network as soon as possible"[49].

-Encrypted all Email communications.

-Used VPN connection of the Radboud university to ensure safe data transfer between the university network drive and the researcher's home computer.

-As outlined above, all *Facilities* necessary to store and share research data are available at Radboud University. No further *Facilities* were necessary.

Regarding Data Protection[50], the General Data Protection Regulation (GDPR) of the Data Protection Act 2018 (DPA 2018) contains all the general rules that the data processing must meet in Europe. The researcher followed all those rules and guidelines during the research study, in order to assure that data security will be safeguarded, and that the data protection and data privacy are secured in accordance with the European laws and standards. Furthermore, within the additional documents submitted to the Hospital's Research and Ethics Committee was a statement signed by the researcher stating that the terms of personal data protection will be followed. Those documents were made available to all the participants as well.

[49] See: https://www.ru.nl/rdm/planning-research/data-management-paragraph/

[50] See: https://www.ru.nl/privacy/english/ and https://eugdpr.org/

Appendix 27: PowerPoint Presentation during GMB Session 1

1Η ΣΥΝΕΔΡΙΑ ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ - 26/02/2020

ΤΟ ΠΡΟΒΛΗΜΑ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΩΝ ΝΟΣΟΚΟΜΕΙΑΚΩΝ ΥΠΗΡΕΣΙΩΝ

στις Μονάδες Εμφραγμάτων/ΜΝ/ΜΕΘ

Αγγελική Λενακάκη, Οικονομολόγος Υγείας, PhD(c), MPH, MSc, BBA

Radboud Universiteit

UNIVERSITÀ DEGLI STUDI DI PALERMO

Ημερήσια Διάταξη

ΣΤΟΧΟΣ:

Να κατανοήσουμε τις αιτίες και τις συνέπειες του προβλήματος

ΕΙΣΑΓΩΓΙΚΑ ΣΤΟΙΧΕΙΑ

Η ερευνήτρια, η Διδ. Διατριβή, Η έρευνα στο Λαϊκό

Η ΜΕΘΟΔΟΣ

Συνεδρίες Ομαδικής Μοντελοποίησης, Δυναμικά Μοντέλα, Διαδικασία, Συστήματα

ΟΡΙΣΜΟΣ ΤΟΥ ΠΡΟΒΛΗΜΑΤΟΣ

Ορισμός, Ιστορικό, Καμπύλη Αναφοράς, Χάσμα

ΕΞΕΡΕΥΝΩΝΤΑΣ ΤΙΣ ΑΙΤΙΕΣ ΤΟΥ ΠΡΟΒΛΗΜΑΤΟΣ

Παράγοντες Επιρροής, Αιτιώδεις Σχέσεις, Λούπες

ΚΛΕΙΣΙΜΟ

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Radboud Universiteit

UNIVERSITÀ DEGLI STUDI DI PALERMO

Η Ερευνήτρια

Η Διδ. Διατριβή

ΤΙΤΛΟΣ

Ξεπερνώντας τα όρια της παραδοσιακής μέτρησης της απόδοσης στα δημόσια νοσοκομεία: Η Μέθοδος Δυναμικής διαχείρισης απόδοσης για τη βελτίωση της ποιότητας των νοσοκομειακών υπηρεσιών "

ΜΕΘΟΔΟΛΟΓΙΑ (CASE STUDY)

1.Εντοπισμός Προβλήματος Ποιότητας σε Δημόσια Νοσοκομεία

2.Συνεντεύξεις & Συνεδρίες Ομαδικής Μοντελοποίησης με Νοσοκομειακά Στελέχη

3.Δημιουργία Ποιοτικών Μοντέλων Ποιότητας

4.Ποσοτικοποίηση & Ανάλυση Συμπεριφοράς Μοντέλων Ποιότητας

Η Έρευνα στο Λαϊκό

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ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

Συνεδρίες Ομαδικής Μοντελοποιησης

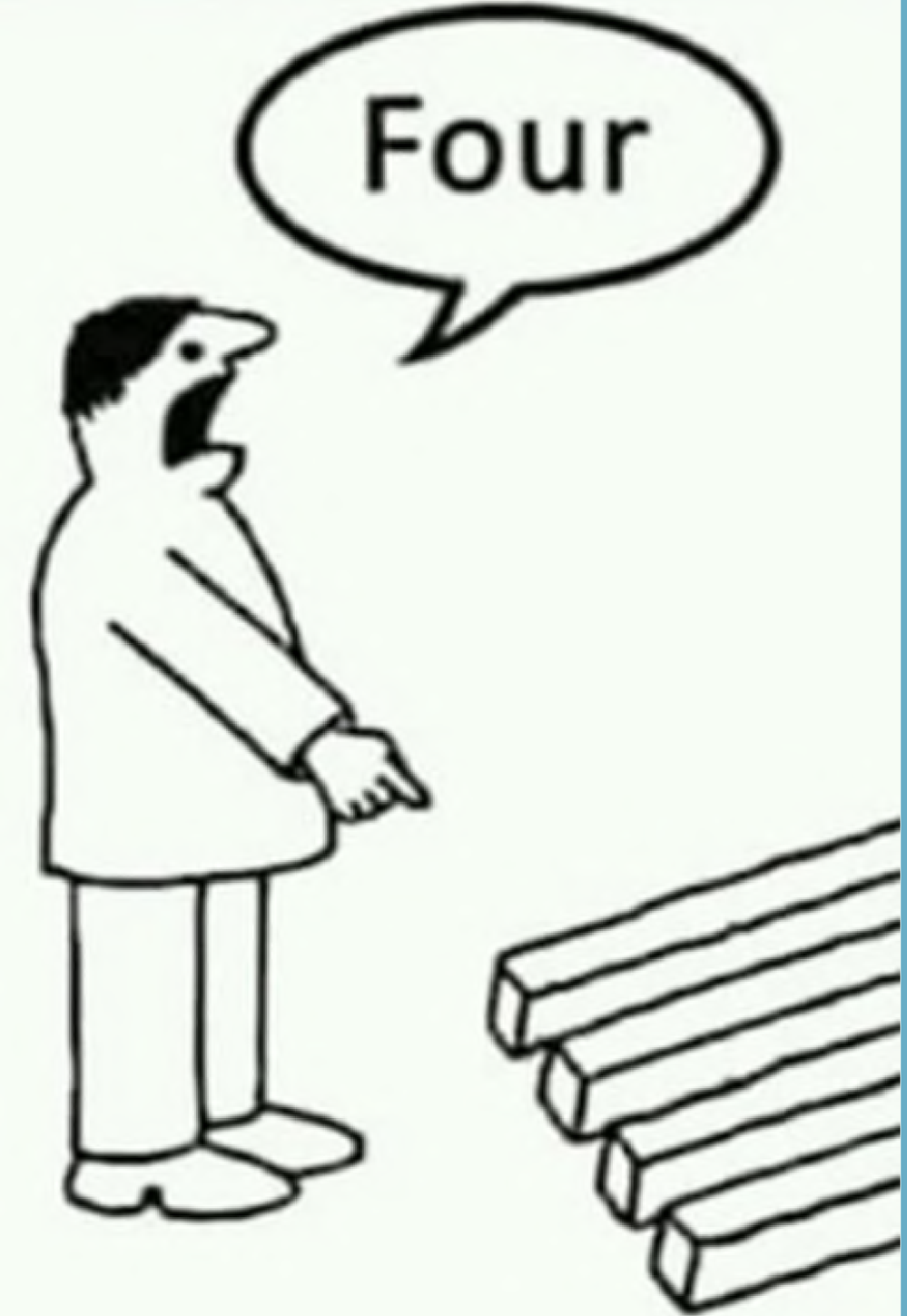
(Richardson and Andersen, 1995; Vennix, 1996;
De Gooyert, 2016, 2018; De Gooyert, Honingh, & Van Genugten, 2019)

ΓΙΑΤΙ ?

ΜΙΑ ΕΝΑΛΛΑΚΤΙΚΗ ΤΩΝ ΚΟΙΝΩΝ "ΣΥΝΑΝΤΗΣΕΩΝ ΕΡΓΑΣΙΑΣ"

FACILITATION
ΟΙ ΛΥΣΕΙΣ ΕΡΧΟΝΤΑΙ ΑΠΟ ΤΟΥΣ ΜΕΣΑ

ΑΠΟΤΥΠΩΣΗ & ΑΠΟΘΗΚΕΥΣΗ ΟΜΑΔΙΚΗΣ ΓΝΩΣΗΣ ΣΕ "ΜΟΝΤΕΛΑ"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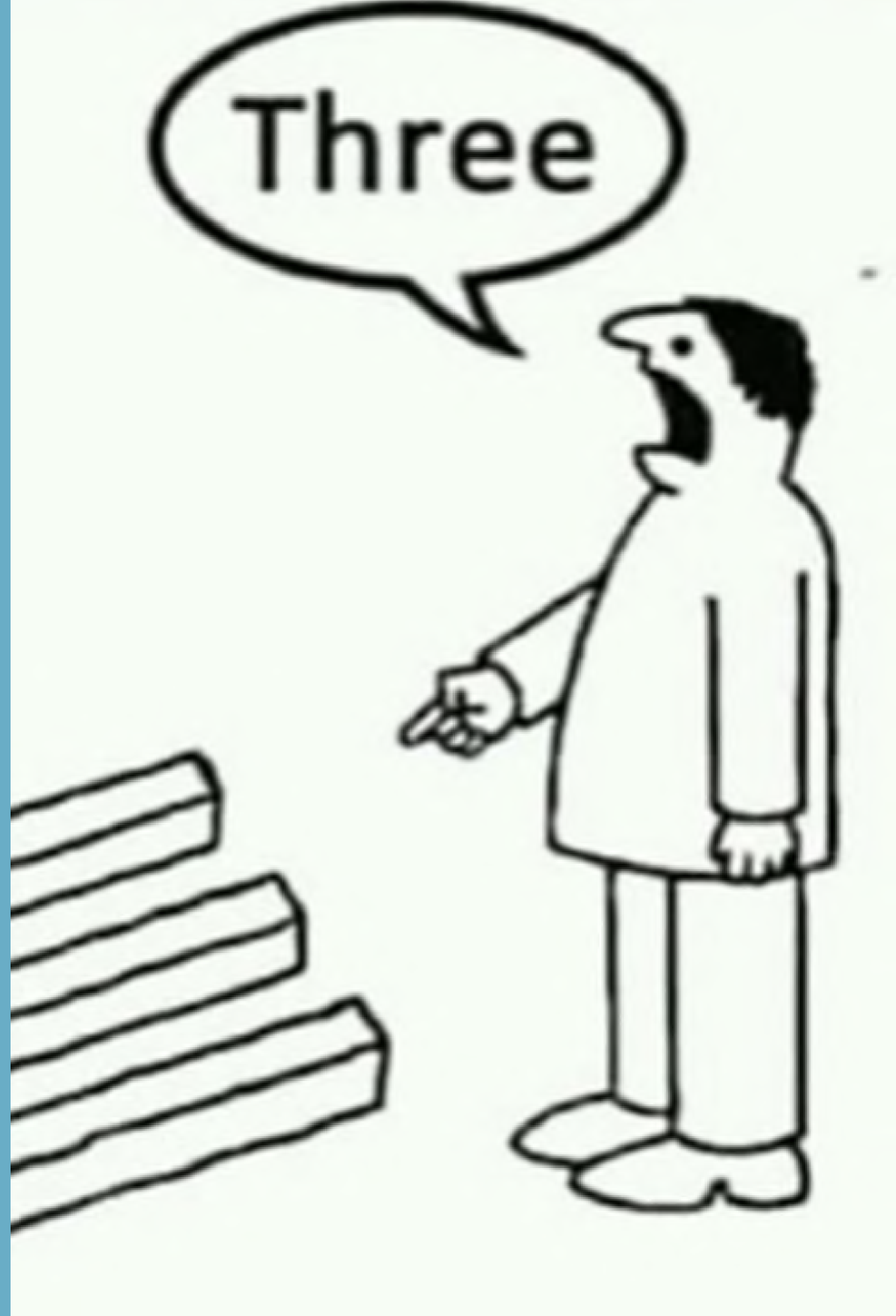
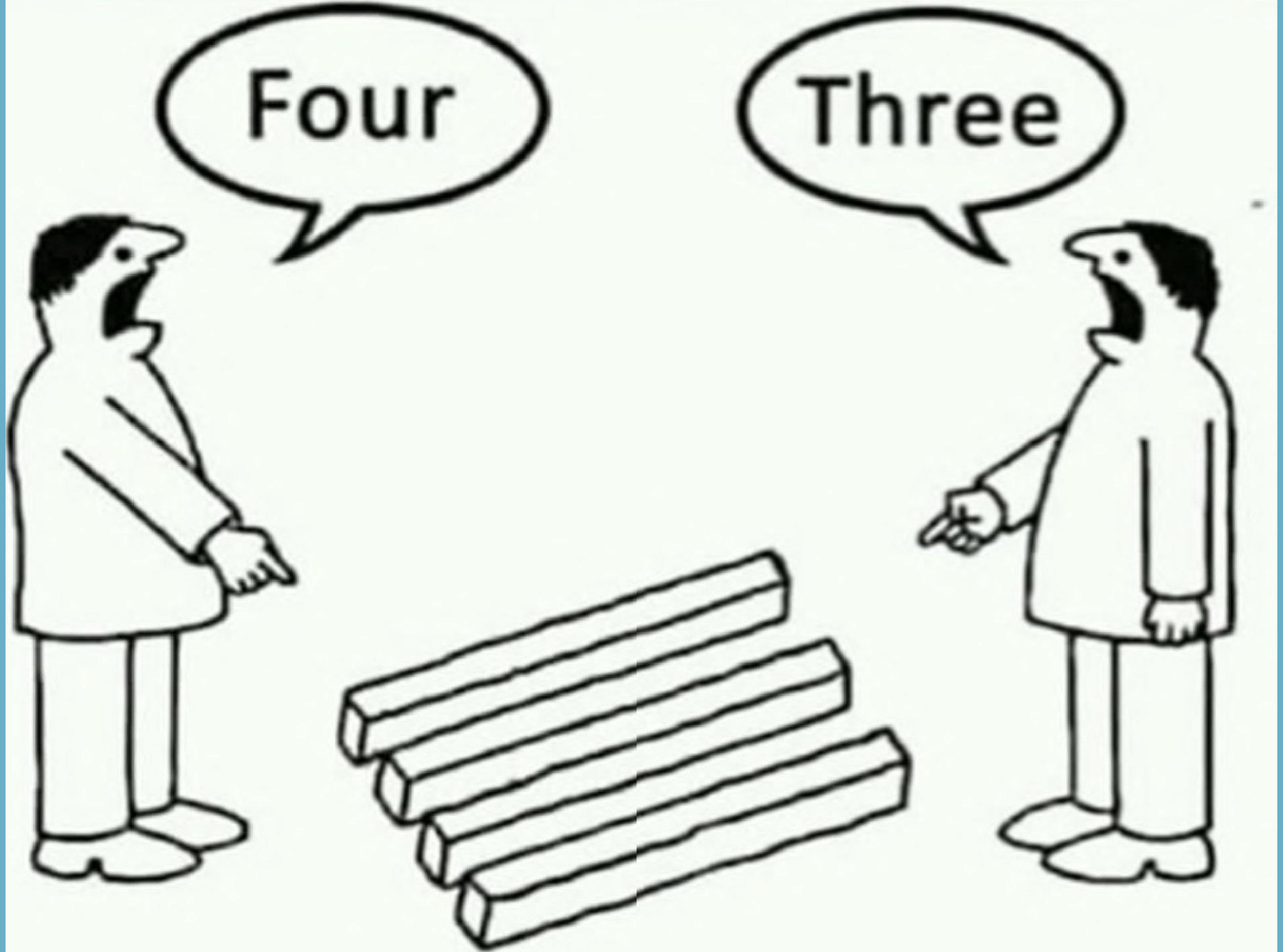

Three


Four
Three

67%

ΤΩΝ (ΠΟΛΙΤΙΚΩΝ, ΕΤΑΙΡΙΚΩΝ, ΔΙΟΙΚΗΤΙΚΩΝ ΚΤΛ) ΑΠΟΦΑΣΕΩΝ ΤΕΛΙΚΑ ΔΕΝ ΥΛΟΠΟΙΟΥΝΤΑΙ

ΔΕ ΦΤΑΝΕΙ ΝΑ ΞΕΡΕΙΣ ΤΗ ΣΩΣΤΗ ΛΥΣΗ ΓΙΑ ΝΑ ΤΗΝ ΚΑΝΕΙΣ ΝΑ ΥΛΟΠΟΙΗΘΕΙ

Δομή

ΣΚΟΠΟΣ

Να κατανοήσουμε καλύτερα το πρόβλημα και τις αιτίες/συνέπειες του προβλήματος

ΔΟΜΗ

Δομημένες ομαδικές δραστηριότητες & συζητήσεις

ΜΟΝΤΕΛΟΠΟΙΗΣΗ

Για καλύτερη κατανόηση, κοινή γλώσσα/ οπτική, αποδοχή και συναίνεση/ συμφωνία επι του προβλήματος

Ομάδα

ΑΓΓΕΛΙΚΗ

Facilitator

ΑΝΑΣΤΑΣΗΣ

Modeler

ΟΛΟΙ ΕΣΕΙΣ

Experts

ΚΑΝΟΝΕΣ

ΕΜΠΙΣΤΕΥΤΙΚΟΤΗΤΑ

Τίποτα από όσα θα ειπωθούν δεν θα βγει προς τα έξω με τη μορφή αποκλειστικών δηλώσεων ή "κουτσομπολιού".

ΟΧΙ ΑΞΙΟΛΟΓΙΚΕΣ ΚΡΙΣΕΙΣ & ΧΑΡΑΚΤΗΡΙΣΜΟΙ

Οι δηλώσεις συζητούνται για το περιεχόμενό τους. Δεν είναι σημαντικό ποιος το λέει αλλά το τι λέει.

ΕΝΕΡΓΟΣ ΣΥΜΜΕΤΟΧΗ

Καλείσθε να παρευρεθείτε και στις δύο συνεδρίες και να αφιερώσετε την αμέριστη προσοχή και συμμετοχή σας.

ΜΟΝΤΕΛΑ

ΔΥΝΑΜΙΚΩΝ ΣΥΣΤΗΜΑΤΩΝ
SYSTEM DYNAMICS (SD)

MIT SLOAN BUSINESS SCHOOL
(Forrester, 1958; 1961; Richardson & Pugh, 1981; Sterman, 1989; 2000).

ΠΟΙΟΤΙΚΑ SD ΜΟΝΤΕΛΑ
CAUSAL LOOP DIAGRAMS (CLD)

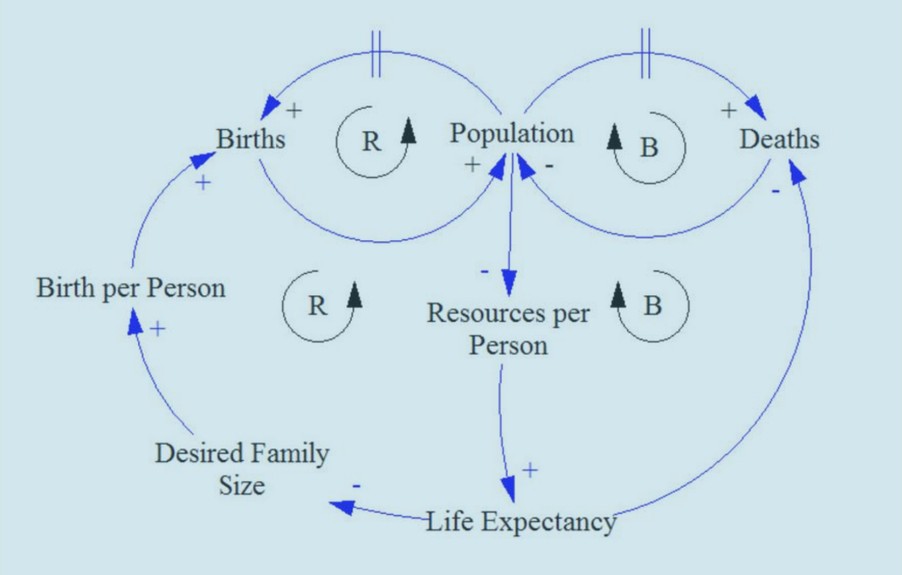
Για χαρτογράφηση και καλύτερη κατανόηση του προβλήματος

ΠΟΣΟΤΙΚΑ SD ΜΟΝΤΕΛΑ
STOCK&FLOW MODELS (SFD)

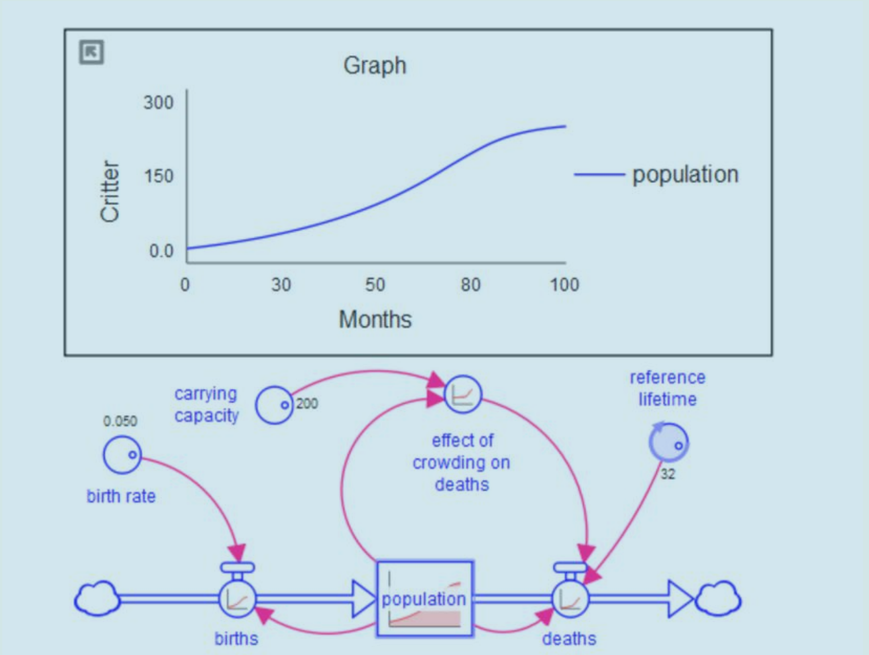
Για προβλέψεις, δοκιμές και εύρεση βέλτιστων τρόπων αντιμετώπισης & πολιτικών

ΜΟΝΤΕΛΑ SD

ΠΟΙΟΤΙΚΑ (CLD)



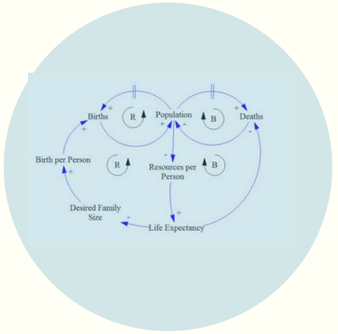
ΠΟΣΟΤΙΚΑ (SFD)



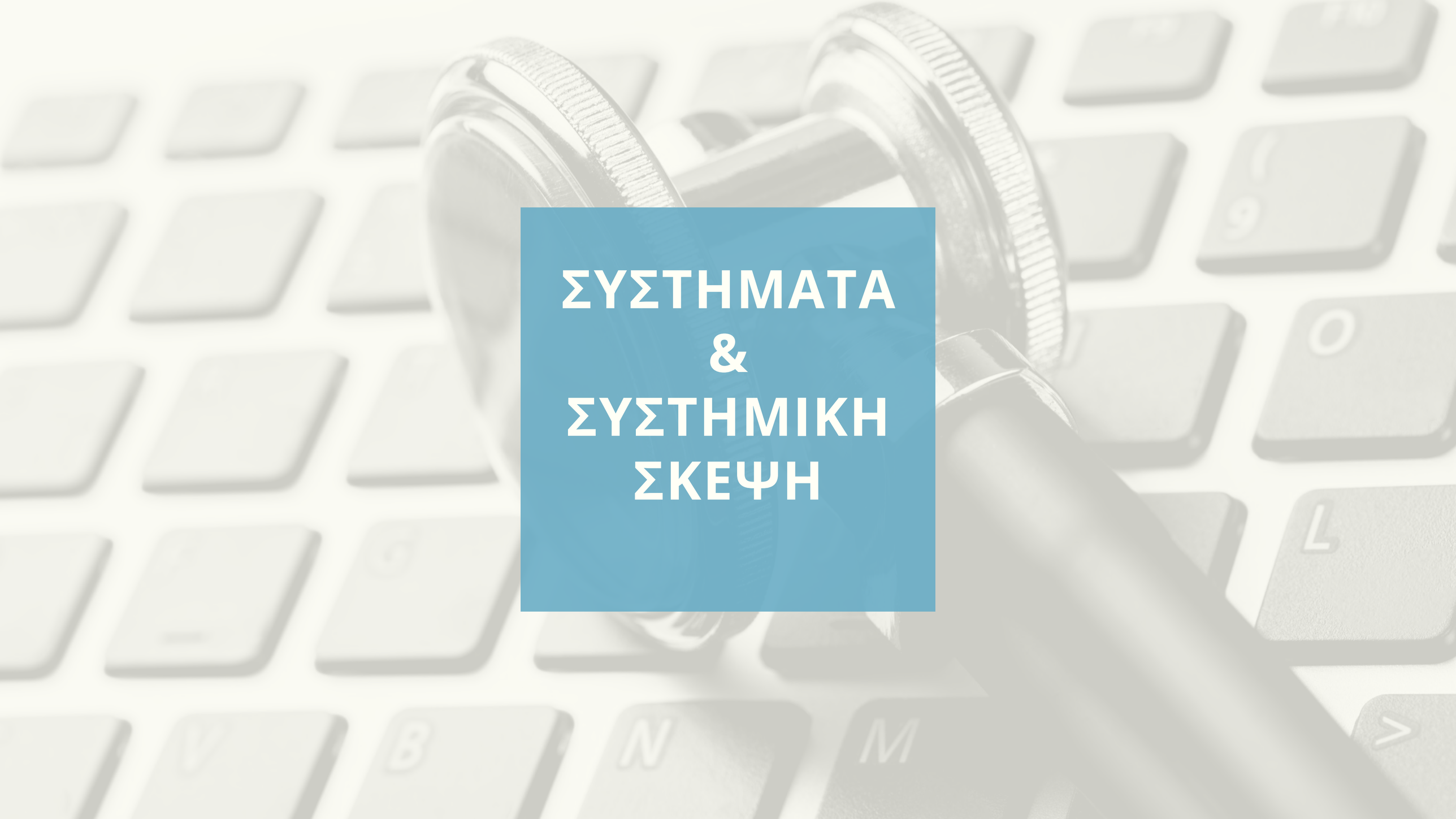
ΔΙΑΔΙΚΑΣΙΑ ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ ΠΡΟΒΛΗΜΑΤΟΣ

Νοητικά Μοντέλα

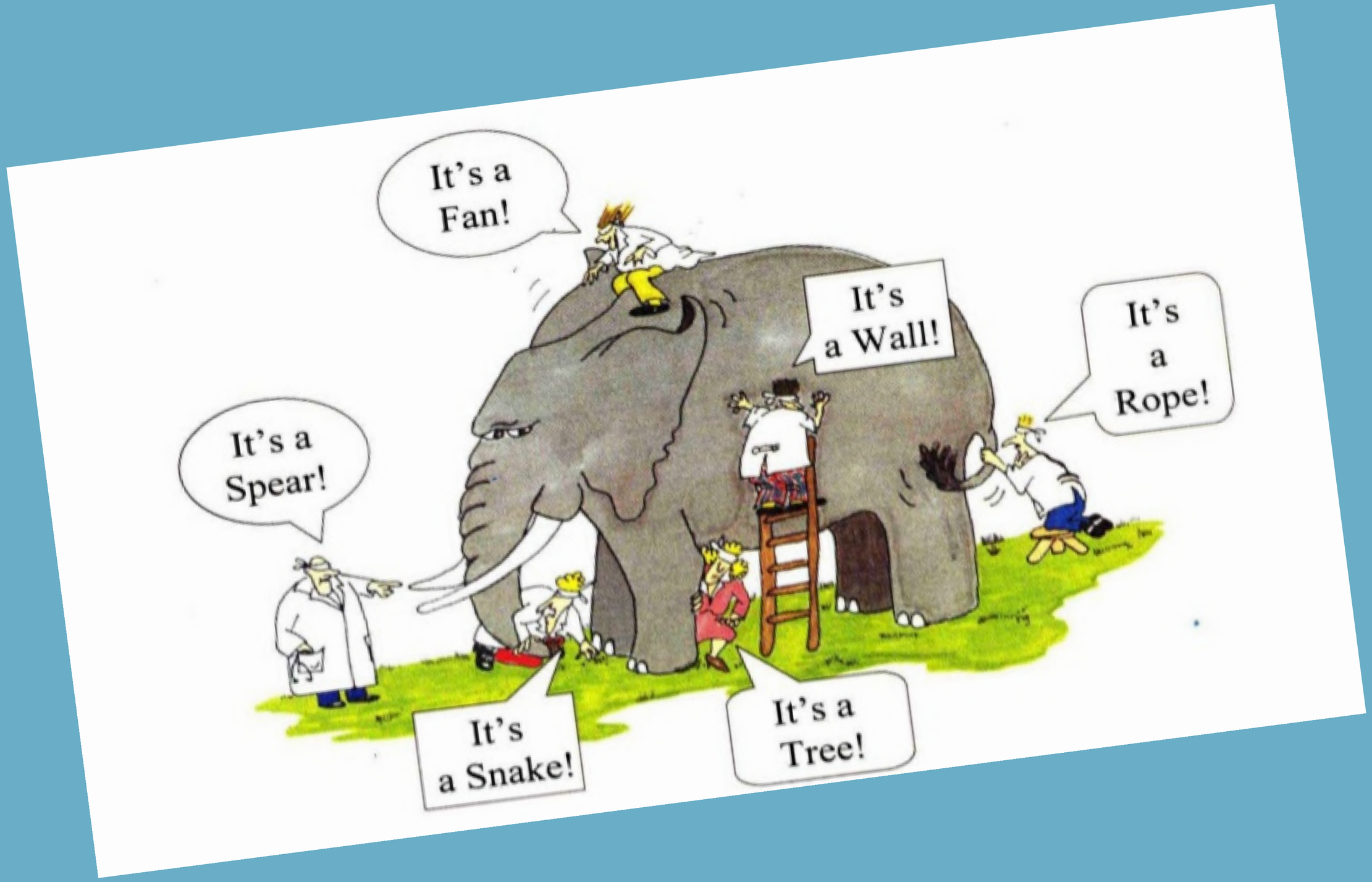
Συνεδρίες Ομαδικής Μοντελοποίησης

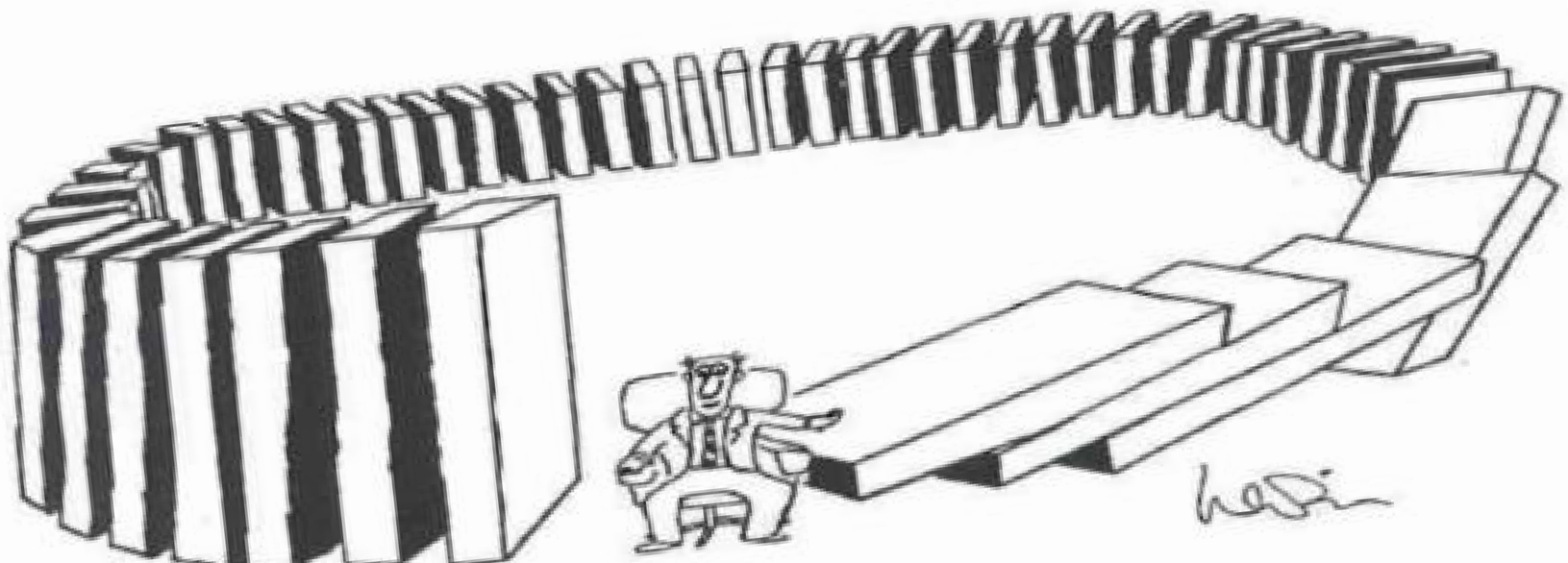


Ποιοτικά Μοντέλα



ΣΥΣΤΗΜΑΤΑ & ΣΥΣΤΗΜΙΚΗ ΣΚΕΨΗ


It's a Fan!
It's a Wall!
It's a Rope!
It's a Spear!
It's a Snake!
It's a Tree!



ΔΟΜΗ
ΣΥΣΤΗΜΑΤΟΣ

ΑΠΟΤΕΛΕΣΜΑ

ΧΡΟΝΟΚΑΘΥΣΤΕΡΗΣΗ

ΠΡΟΒΛΗΜΑ

ΑΙΤΙΟ

ΣΥΜΒΑΝ

ΜΠΟΥΜΕΡΑΝΚ

ΣΥΣΣΩΡΕΥΣΗ
ΧΡΕΩΝ

ΕΛΛΕΙΜΜΑΤΑ

ΧΡΟΝΟΚΑΘΥΣΤΕΡΗΣΗ

ΠΤΩΧΕΥΣΗ/
ΟΙΚΟΝΟΜΙΚΗ
ΚΡΙΣΗ

ΜΠΟΥΜΕΡΑΝΚ

ΚΡΑΤΙΚΟΣ
ΔΑΝΕΙΣΜΟΣ

ΣΥΣΤΗΜΑ

ΜΟΝΤΕΛΟ

ΠΡΟΒΛΗΜΑ

ΣΥΣΤΗΜΑ

Η Πραγματικότητα

ΜΟΝΤΕΛΟ

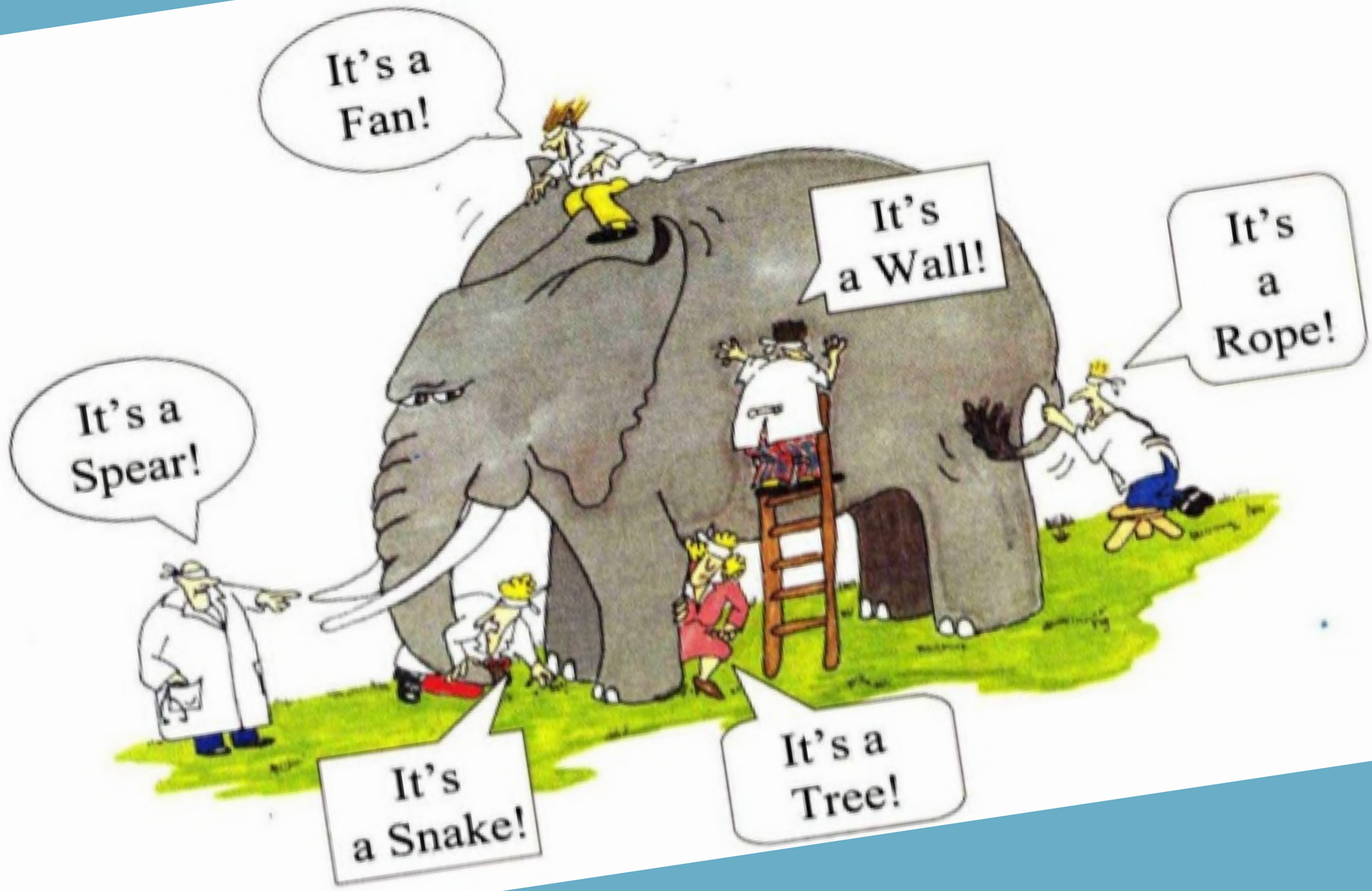
ΜΙΑ Απλούστευση της Πραγματικότητας

ΠΡΟΒΛΗΜΑ

= (Επιθυμητή Κατάσταση - Υπάρχουσα Κατάσταση) του Συστήματος

...και να θυμάστε:

ΟΛΑ ΤΑ ΜΟΝΤΕΛΑ ΕΙΝΑΙ ΛΑΘΟΣ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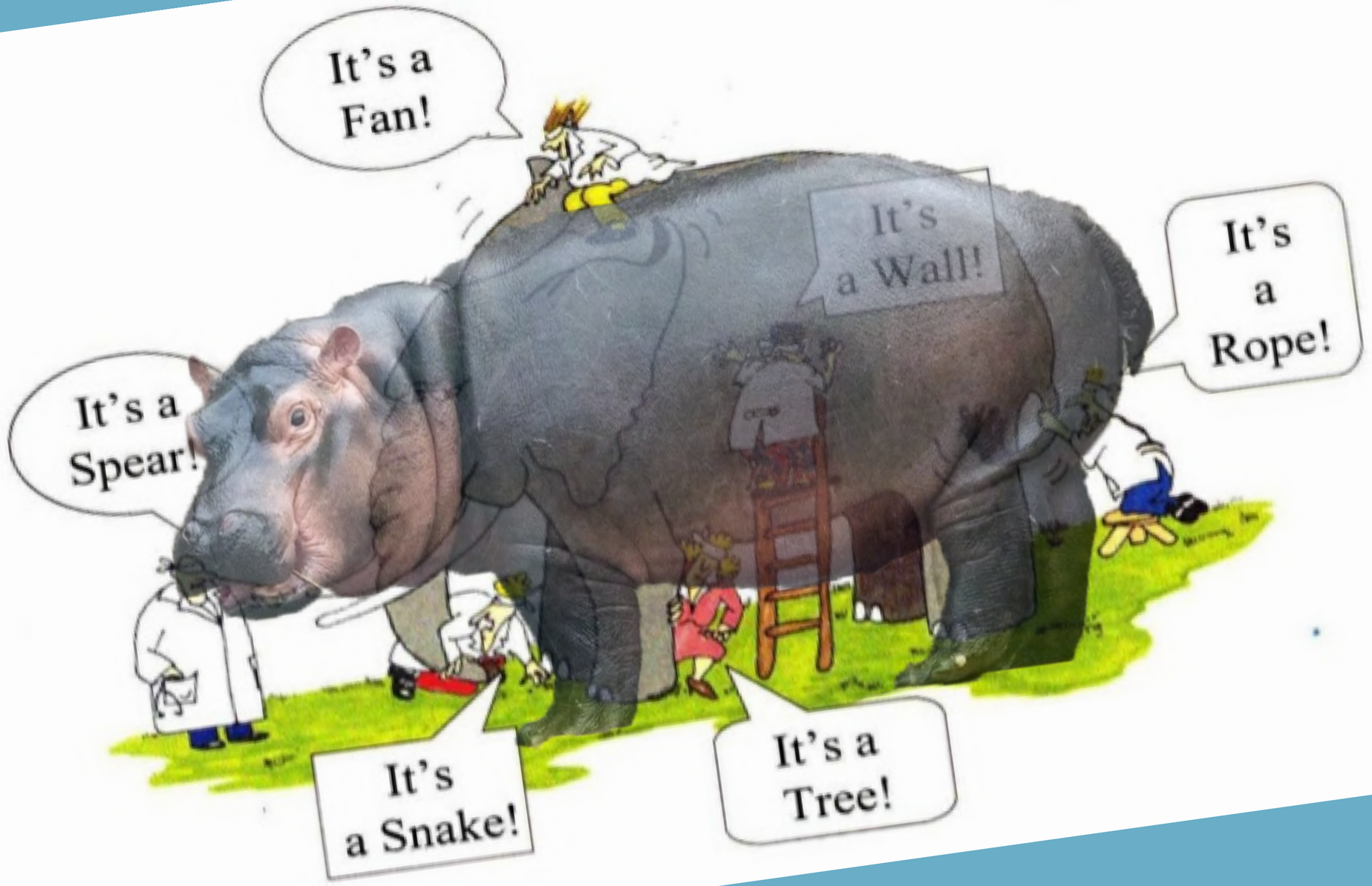

It's a Fan!
It's a Wall!
It's a Rope!
It's a Spear!
It's a Snake!
It's a Tree!

Μην ανησυχείτε καθόλου:

Εσείς το μόνο που χρειάζεται να κάνετε είναι:

- **ΑΚΟΥΤΕ προσεκτικα**
- **ΜΟΙΡΑΖΕΣΤΕ απόψεις**
- **ΣΥΜΜΕΤΕΧΕΤΕ ενεργά**

Τα υπόλοιπα τα αναλαμβάνουμε εμείς !

ΩΡΑ ΝΑ ΓΝΩΡΙΣΤΟΥΜΕ ΚΑΛΥΤΕΡΑ

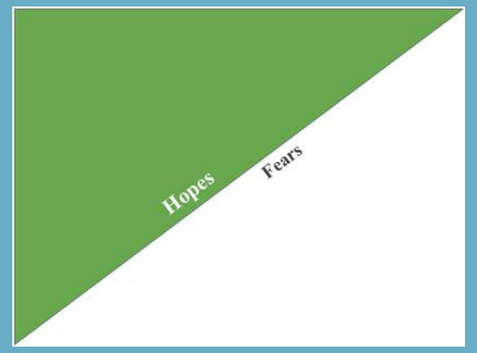
ΟΝΟΜΑ

ΜΟΝΑΔΑ

ΘΕΣΗ

ΡΟΛΟΣ ΣΤΗΝ ΠΟΙΟΤΗΤΑ

ΩΡΑ ΝΑ ΓΝΩΡΙΣΤΟΥΜΕ ΚΑΛΥΤΕΡΑ



Σε χαρτάκια: 15'

ΔΙΑΛΕΙΜΜΑ 15'

Ημερήσια Διάταξη

ΣΤΟΧΟΣ:

Να κατανοήσουμε τις αιτίες και τις συνέπειες του προβλήματος

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ΕΞΕΡΕΥΝΩΝΤΑΣ ΤΙΣ ΑΙΤΙΕΣ ΤΟΥ ΠΡΟΒΛΗΜΑΤΟΣ

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ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

ΟΡΙΣΜΟΣ ΠΡΟΒΛΗΜΑΤΟΣ

ΧΡΟΝΟΣ 3' - ΑΤΟΜΙΚΑ

Δώστε έναν δικό σας ορισμό της ποιότητας υπηρεσιών των Μονάδων Εμφραγμάτων/ΜΝ/ΜΕΘ, όπως εσείς τον αντιλαμβάνεστε.

Παρουσίαση: 10'

ΙΣΤΟΡΙΚΟ ΠΡΟΒΛΗΜΑΤΟΣ

ΧΡΟΝΟΣ 5' - ΣΕ ΔΥΑΔΕΣ

Κατά τη διάρκεια ποιας περιόδου αναπτύχθηκε το πρόβλημα στην ποιότητα των υπηρεσιών των μονάδων Εμφραγμάτων/ΜΝ/ΜΕΘ;
Σε ποια χρονική περίοδο θα θέλατε να το τοποθετήσουμε/ εξετάσουμε;

Παρουσίαση: 15'

ΚΑΜΠΥΛΗ ΑΝΑΦΟΡΑΣ

ΧΡΟΝΟΣ 5' - ΣΕ ΔΥΑΔΕΣ

Ζωγραφίστε μια καμπύλη που να δείχνει πως εξελίχθηκε & πως αναμένεται να εξελιχθεί η ποιότητα κατά την χρονική περίοδο που επιλέξατε.

Παρουσίαση: 15'

ΧΑΣΜΑ

ΧΡΟΝΟΣ 5' - ΟΜΑΔΑ

Ζωγραφίστε επάνω στο διάγραμμα μια άλλη καμπύλη που να δείχνει *ΠΩΣ ΙΔΑΝΙΚΑ ΘΑ ΘΕΛΑΤΕ* να εξελιχθεί η ποιότητα κατά την χρονική περίοδο που επιλέξατε.

ΔΙΑΛΕΙΜΜΑ 15'

ΣΥΝΟΨΗ ΠΡΟΒΛΗΜΑΤΟΣ

Ορισμός: Ποιότητα είναι....

Διάγραμμα

Ημερήσια Διάταξη

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ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

Μεταβλητή

Κάτι μετρήσιμο

πχ "θερμοκρασία", αλλά όχι "καιρός"

ΜΕΤΑΒΛΗΤΕΣ ΠΟΙΟΤΗΤΑΣ

ΧΡΟΝΟΣ 5' - ΑΤΟΜΙΚΑ

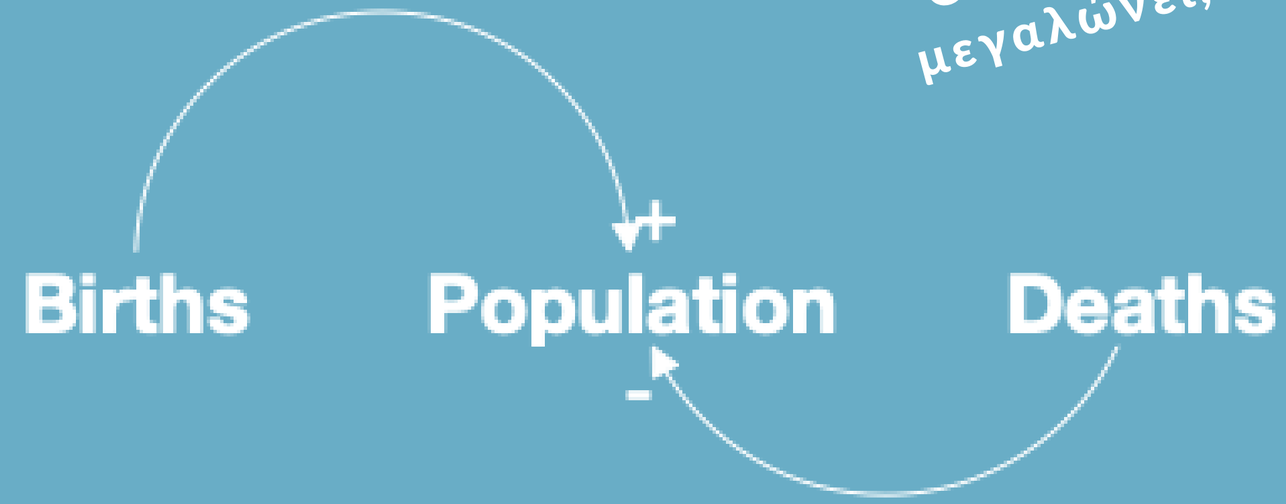
Καταγράψτε σε χαρτάκια όσες μεταβλητές θεωρείτε σχετικές με την ποιότητα των υπηρεσιών των μονάδων Εμφραγμάτων/ ΜΝ/ΜΕΘ.

Παρουσίαση: 20'

Αιτιώδεις Σύνδεσμοι

Θετική ή αρνητική σχέση

Tip:
"Όσο το ... μεγαλώνει, τόσο..."



ΞΕΚΙΝΩΝΤΑΣ ΤΟ ΜΟΝΤΕΛΟ ΜΑΣ

ΧΡΟΝΟΣ 30' - ΟΜΑΔΑ

Βάλτε πάνω-πάνω τις μεταβλητές που θεωρείτε πιο σημαντικές.
Παρουσιάστε στην ομάδα μία μεταβλητή, και συνδέστε την (ΘΕΤΙΚΟΣ Η ΑΡΝΗΤΙΚΟΣ ΑΙΤΙΩΔΗΣ ΣΥΝΔΕΣΜΟΣ) με την Ποιότητα.

ΔΙΑΛΕΙΜΜΑ 15'

Ημερήσια Διάταξη

ΣΤΟΧΟΣ:

Να κατανοήσουμε τις αιτίες και τις συνέπειες του προβλήματος

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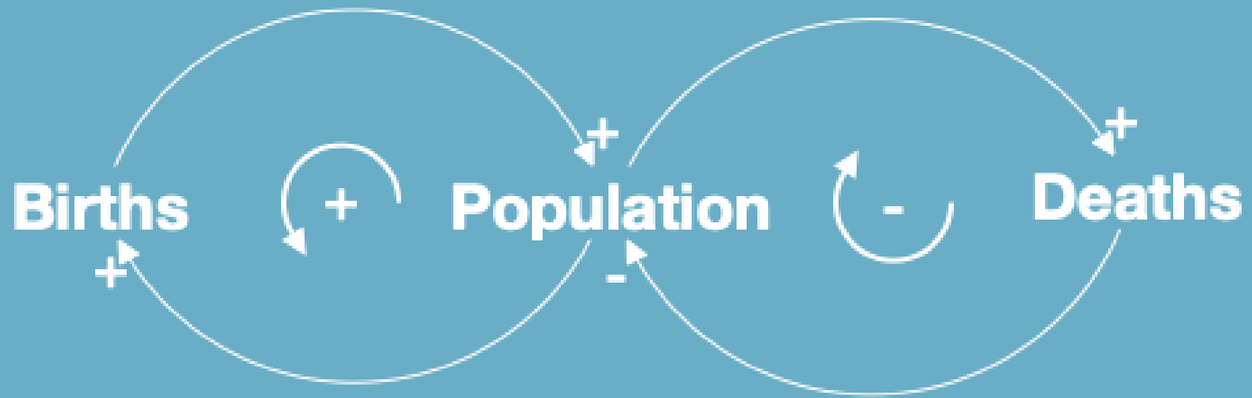
Ανακαφαλαίωση, Συζήτηση, Σχόλια

ΛΟΥΠΕΣ

Επαναλαμβανόμενοι Κύκλοι Ανάδρασης (Feedback Loops)

Αυτοενισχυόμενες (+) ή
Αυτοεξισορροπούμενες (-)

Tip:
Θετικό δε σημαίνει απαραίτητα "καλό"



ΨΑΧΝΟΝΤΑΣ ΤΙΣ ΛΟΥΠΕΣ ΣΤΟ ΜΟΝΤΕΛΟ ΜΑΣ (1)

ΧΡΟΝΟΣ 5' - ΑΤΟΜΙΚΑ

Προσπαθήστε να βρείτε ή να δημιουργήσετε λούπες στο μοντέλο

Tip: Μπορείτε να προσθέσετε ενδιάμεσες μεταβλητές, που δεν υπάρχουν αυτή τη στιγμή στο μοντέλο.

ΨΑΧΝΟΝΤΑΣ ΤΙΣ ΛΟΥΠΕΣ ΣΤΟ ΜΟΝΤΕΛΟ ΜΑΣ (2)

ΧΡΟΝΟΣ 10' - ΣΕ ΔΥΑΔΕΣ

Συζητήστε τις λούπες που βρήκατε, κάντε αλλαγές ώσπου να συμφωνήσετε και ετοιμασθείτε να τις παρουσιάσετε στην ομάδα

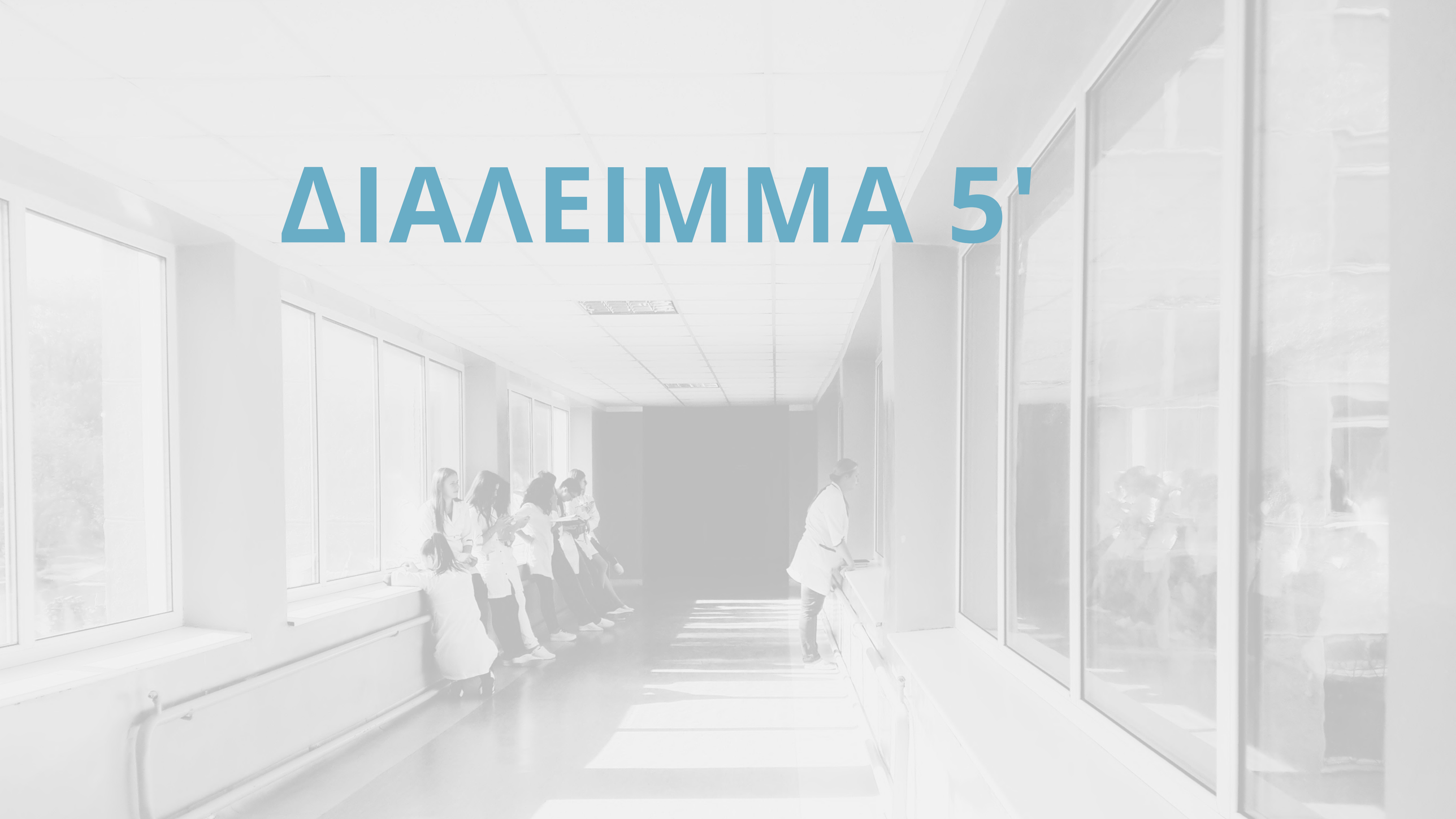
Παρουσίαση: 20'

ΤΑ "STORIES" ΤΟΥ ΜΟΝΤΕΛΟΥ ΜΑΣ

ΧΡΟΝΟΣ 20' - ΟΜΑΔΑ

Επιλέξτε μία λούπα ο καθένας και περιγράψτε με δικά σας λόγια τι σημαίνει στην πράξη/ στην καθημερινή πρακτική

ΔΙΑΛΕΙΜΜΑ 5'



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Ανακαφαλαίωση, Συζήτηση, Σχόλια

ΑΝΑΚΕΦΑΛΑΙΩΣΗ

ΧΡΟΝΟΣ 5' - ΑΤΟΜΙΚΑ

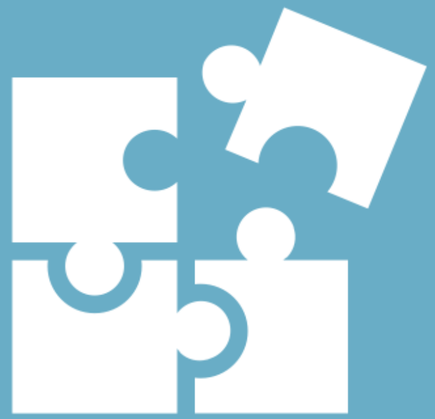
-Τι καινούργιο μάθατε σήμερα; Το πρώτο που σας έρχεται στο μυαλό.

-Ποιο είναι το πιο σημαντικό μέρος του μοντέλου για εσάς; Γιατί;

-Ποιο είναι το πιο αντιφατικό/ενδιαφέρον/ περίεργο κομμάτι του μοντέλου για εσάς; Γιατί;

Παρουσίαση: 15'

Τα σημερινά μας επιτεύγματα



ΚΟΙΝΟΣ ΟΡΙΣΜΟΣ, ΟΠΤΙΚΗ & ΚΑΤΑΝΟΗΣΗ ΤΟΥ ΠΡΟΒΛΗΜΑΤΟΣ ΠΟΙΟΤΗΤΑΣ

ΚΟΙΝΗ ΟΠΤΙΚΗ & ΚΑΤΑΝΟΗΣΗ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΩΣ ΣΥΣΤΗΜΑ

ΠΡΟΚΑΤΑΡΚΤΙΚΟ ΜΟΝΤΕΛΟ ΠΟΙΟΤΗΤΑΣ

Στην επόμενη συνεδρία:

ΤΕΛΕΙΟΠΟΙΗΣΗ
ΜΟΝΤΕΛΟΥ ΠΟΙΟΤΗΤΑΣ

ΣΗΜΕΙΑ ΠΑΡΕΜΒΑΣΗΣ

ΣΤΡΑΤΗΓΙΚΕΣ & ΠΟΛΙΤΙΚΕΣ
ΓΙΑ ΒΕΛΤΙΩΣΗ ΤΟΥ
ΠΡΟΒΛΗΜΑΤΟΣ

ΣΑΣ ΕΥΧΑΡΙΣΤΟΥΜΕ ΘΕΡΜΑ ΓΙΑ ΤΗ ΣΥΝΕΡΓΑΣΙΑ

2Η ΣΥΝΕΔΡΙΑ ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ - 28/02/2020

ΤΟ ΠΡΟΒΛΗΜΑ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΩΝ ΝΟΣΟΚΟΜΕΙΑΚΩΝ ΥΠΗΡΕΣΙΩΝ

στις Μονάδες Εμφραγμάτων/ΜΝ/ΜΕΘ

Αγγελική Λενακάκη, Οικονομολόγος Υγείας, PhD(c), MPH, MSc, BBA

Radboud Universiteit

UNIVERSITÀ DEGLI STUDI DI PALERMO

Τα προχτεσινά μας επιτεύγματα

ΚΟΙΝΟΣ ΟΡΙΣΜΟΣ, ΟΠΤΙΚΗ & ΚΑΤΑΝΟΗΣΗ ΤΟΥ ΠΡΟΒΛΗΜΑΤΟΣ ΠΟΙΟΤΗΤΑΣ

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ΠΡΟΚΑΤΑΡΚΤΙΚΟ ΜΟΝΤΕΛΟ ΠΟΙΟΤΗΤΑΣ

Στην σημερινή συνεδρία:

ΤΕΛΕΙΟΠΟΙΗΣΗ
ΜΟΝΤΕΛΟΥ ΠΟΙΟΤΗΤΑΣ

ΣΗΜΕΙΑ ΠΑΡΕΜΒΑΣΗΣ

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ΓΙΑ ΒΕΛΤΙΩΣΗ ΤΟΥ
ΠΡΟΒΛΗΜΑΤΟΣ

Ημερήσια Διάταξη

ΣΤΟΧΟΣ:

Να σχεδιάσουμε στρατηγικές επίλυσης του προβλήματος

ΑΝΑΣΚΟΠΗΣΗ ΤΟΥ ΜΟΝΤΕΛΟΥ

Το πρόβλημα, Αιτίες & Συνέπειες του προβλήματος

ΣΤΡΑΤΗΓΙΚΟΣ ΣΧΕΔΙΑΣΜΟΣ

Στρατηγικές Επίλυσης, Σημεία Παρέμβασης

ΙΕΡΑΡΧΗΣΗ & ΕΠΙΛΟΓΗ ΣΤΡΑΤΗΓΙΚΩΝ

...με βάση τη ευκολία εφαρμογής και το μακροπρόθεσμο αντίκτυπο

ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΣ ΕΠΟΜΕΝΩΝ ΕΝΕΡΓΕΙΩΝ

Ρόλοι, Ενέργειες, Χρονοδιάγραμμα

ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

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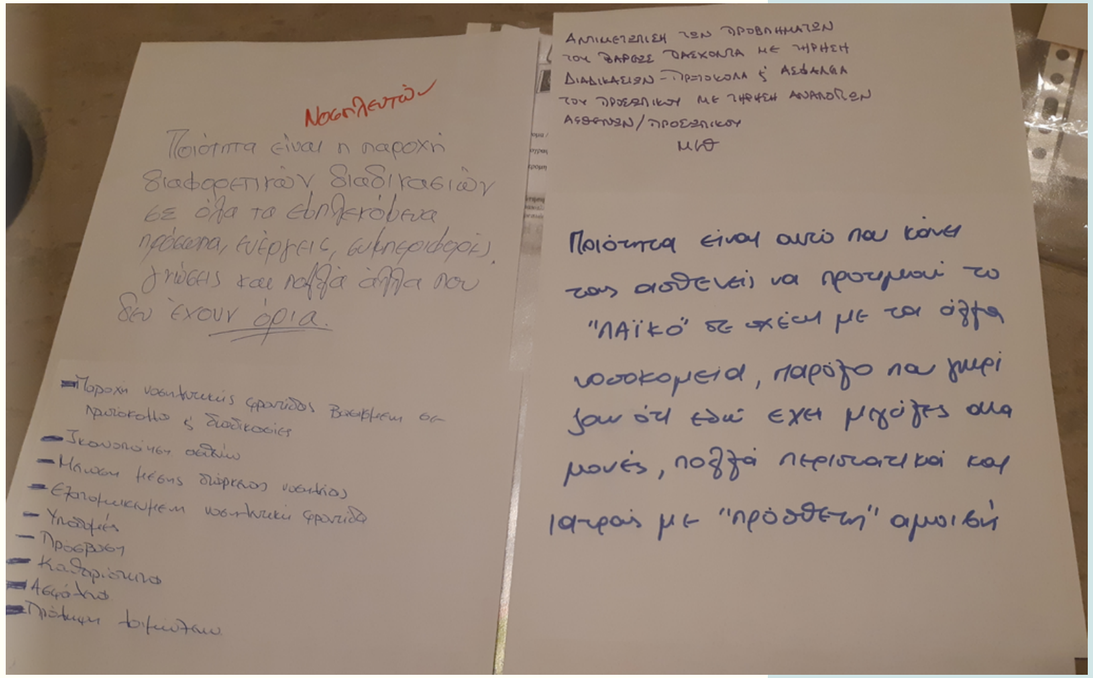
ΟΡΙΣΜΟΣ

Ποιότητα Νοσηλευτικών Υπηρεσιών είναι η παροχή εξατομικευμένης φροντίδας υγείας προς τον ασθενή, με:
- ασφάλεια (για τον ασθενή και για το προσωπικό)
- υπευθυνότητα (τήρηση πρωτοκόλλων, αναλογιών και διαδικασιών)
- **αξιοπρέπεια** (καλές υποδομές, πρόσβαση χωρίς αναμονές και "πρόσθετες" αμοιβές, καθαριότητα)



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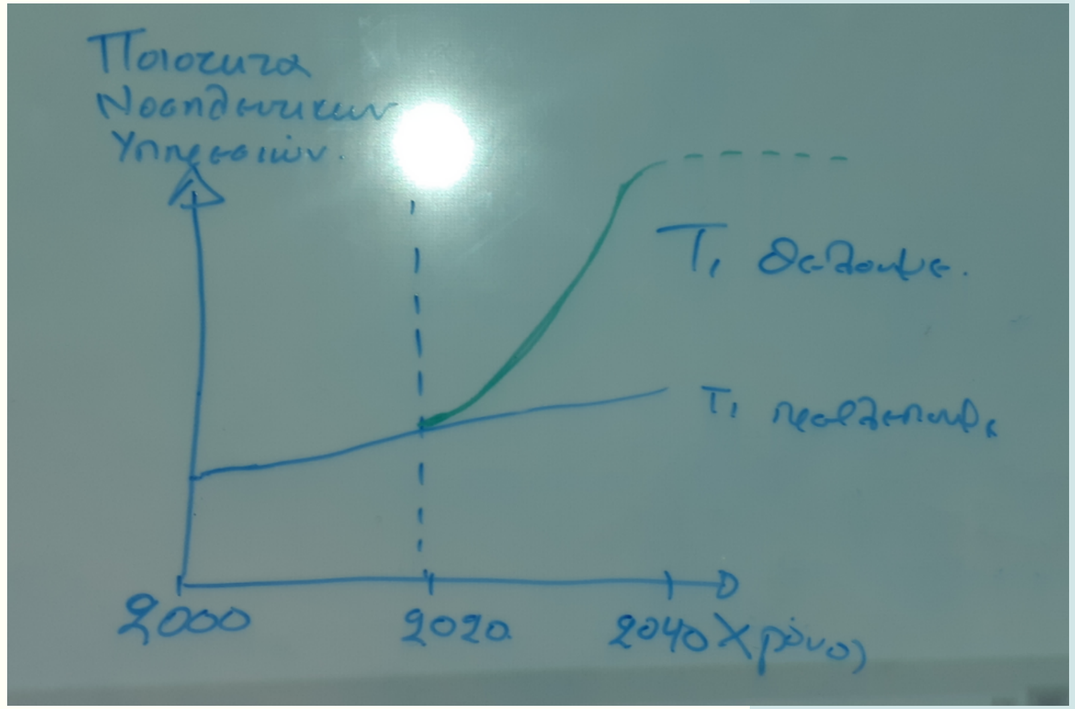
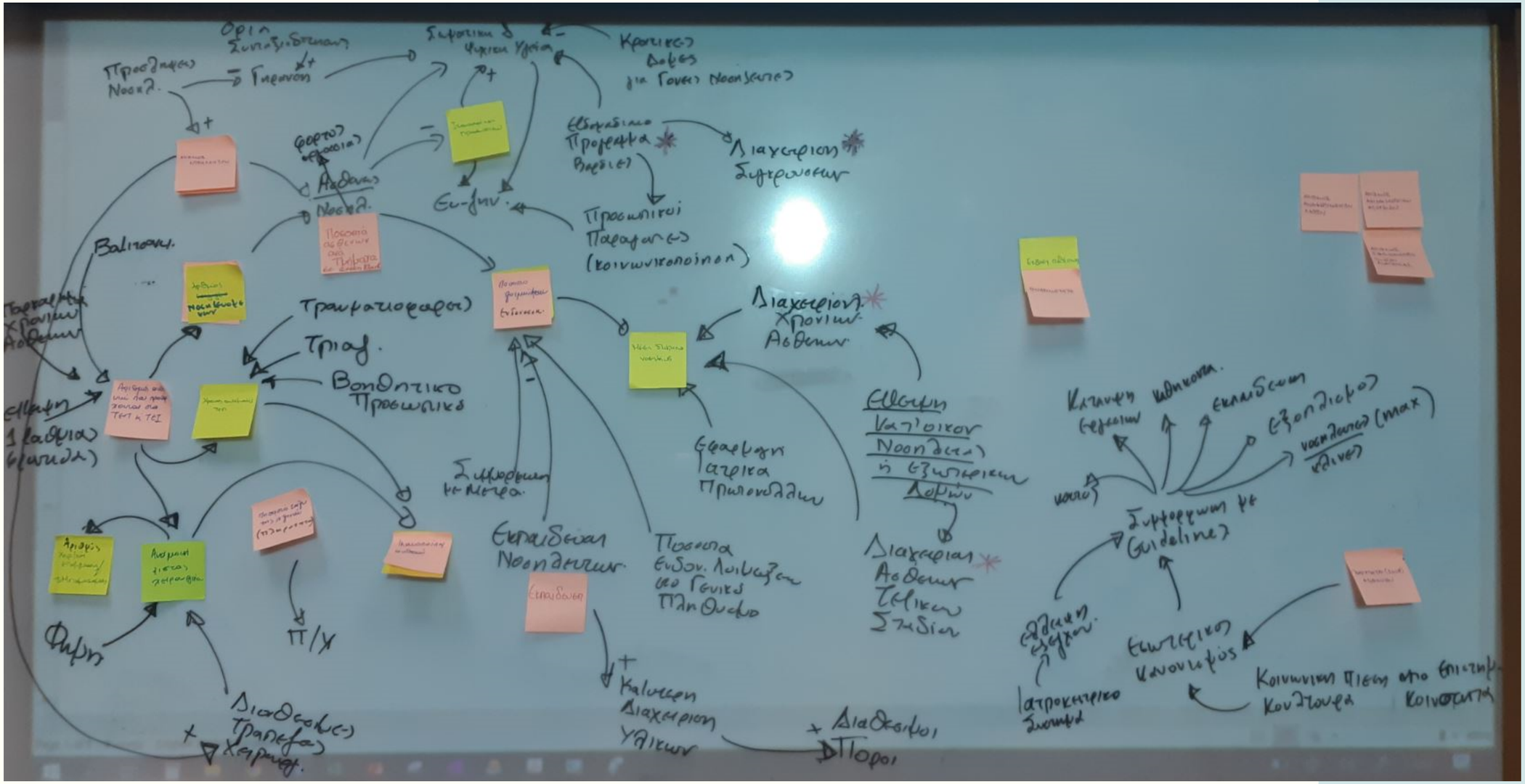
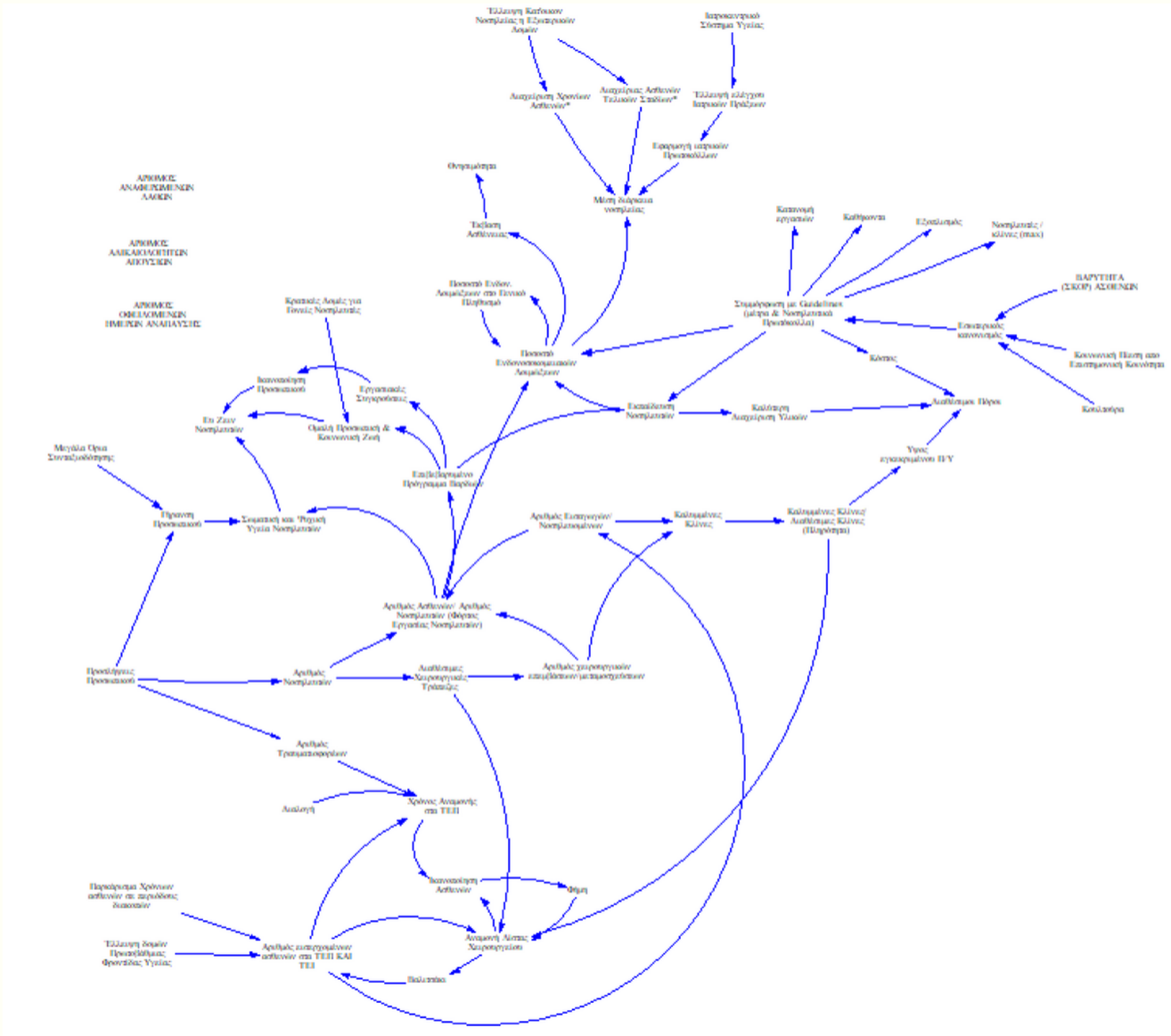
ΔΙΑΓΡΑΜΜΑ



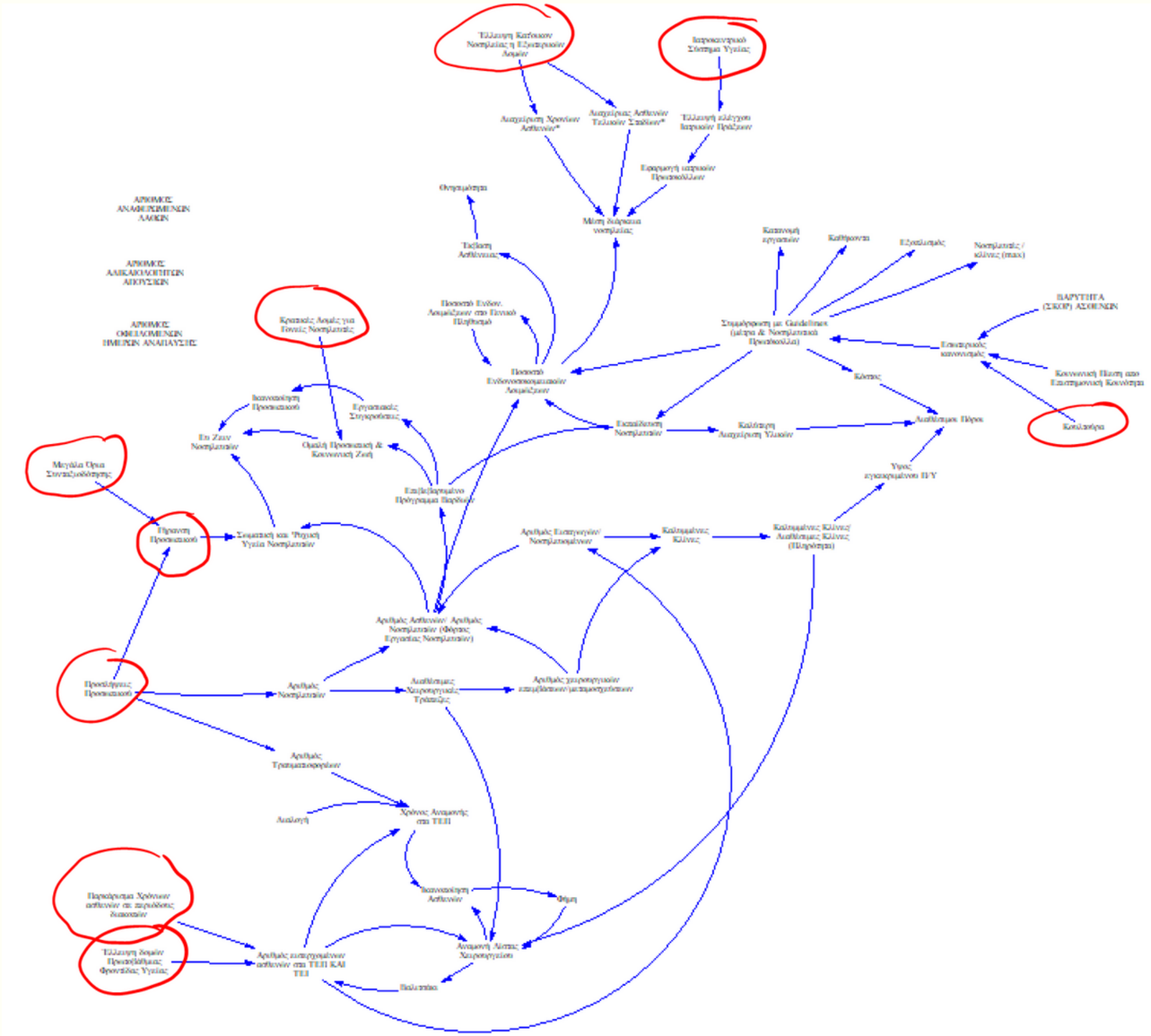
ΤΟ ΜΟΝΤΕΛΟ


Βαθμολογία
Τραυματιοφορείς
Τριαδ.
Βοηθητικό Προσωπικό
Φωτιά
Διαδρομές
Τράπεζα
Χαρτιά
Π/Υ
Εκπαίδευση Νοσηλευτών
Καλύτερη Διαχείριση Υγείας
Διαδρομοί
Πόροι
Διαχείριση Χρονίως Ασθενών
Διαχείριση Ασθενών Τελικών Σταδίων
Ιατροκοινωνικό Συμβούλιο
Κοινωνική Πίεση στο Επιστημονικό Κοινότητα

ΤΟ ΜΟΝΤΕΛΟ


Τέλειωση Κατόχων Νοσηλείας ή Εξαιρετικών Δικών
Ιατρικαντρικό Σύστημα Υγείας
Διαχείριση Χρονίων Ασθενών*
Διαχείριση Ασθενών Τελικών Σταδίων*
Έλλειψη ελέγχου Ιατρικών Πράξεων
Εφαρμογή ιατρικών Προσωπίλων
Θνησιμότητα
ΑΡΙΘΜΟΣ ΑΝΑΘΕΩΡΗΜΕΝΩΝ ΛΑΘΩΝ
Μέση διάρκεια νοσηλείας
Έκβαση Ασθένειας
ΑΡΙΘΜΟΣ ΑΛΛΑΞΑΣΟΜΕΝΩΝ ΑΠΟΨΕΩΝ
Κατανομή εργασιών
Καθήκοντα
Εξοπλισμός
Νοσηλευτές / κλίνες (max)
Ποσοστό Ενδον. Λοιμώξεων στο Γενικό Πληθυσμό
ΑΡΙΘΜΟΣ ΟΦΕΙΛΟΜΕΝΩΝ ΗΜΕΡΩΝ ΑΝΑΠΑΥΣΗΣ
Κρατικές Δομές για Γενικές Νοσηλευτές
Συμμόρφωση με Guidelines (μέσα & Νοσηλευτικό Προσωπικό)
ΠΑΡΑΓΟΝΤΑ (ΣΕΚΟΡ) ΑΣΘΕΝΕΙΩΝ
Ενισχυτικούς κανονισμούς
Κοινωνική Πίεση από Επιστημονική Κοινότητα
Κοπλιαφορα
Ποσοστό Ενδονοσοκομειακών Λοιμώξεων
Ικανοποίηση Προσωπικού
Εργασιακές Συγκρούσεις
Κόστος
Εκπαίδευση Νοσηλευτών
Κάλυψη Διαχείριση Υλικών
Διαθέσιμες Πόρες
Στη Ζώνη Νοσηλευτών
Ομαλή Προσωπική & Κοινωνική Ζωή
Μεγάλα Ορια Συναλλαγόσημης
Υψος εγκαρμένου Π/Υ
Επιβεβαιωμένο Πρόγραμμα Παρέμβ.
Πρώιμη Προσωπικού
Σωματική και Ψυχική Υγεία Νοσηλευτών
Αριθμός Εκπαιδευτών Νοσηλευτών (Φόρτος Εργασίας Νοσηλευτών)
Καλυμμένες Κλίνες
Καλυμμένες Κλίνες/ Διαθέσιμες Κλίνες (Πληρότητα)
Αριθμός Ασθενών/ Αριθμός Νοσηλευτών (Φόρτος Εργασίας Νοσηλευτών)
Προσλήψεις Προσωπικού
Αριθμός Νοσηλευτών
Διαθέσιμες Χειρουργικές Τράπεζες
Αριθμός χειρουργικών επεμβάσεων μεταμοσχεύσεων
Αριθμός Τραυματιοφορέων
Διαλογή
Χρόνος Αναμονής στα ΤΕΠ
Παραπάνω Χρόνων ασθενών σε παγκόσμιος διακοπών
Ικανοποίηση Ασθενών
Θάνη
Αναμονή Λίστας Χειρουργείου
Έλλειψη δομών Προσκόλλησης Φροντίδας Υγείας
Αριθμός εισαγγελμένων ασθενών στα ΤΕΠ ΚΑΙ ΤΕΙ
Βελτιστοι

ΤΟ ΜΟΝΤΕΛΟ


Έλλειψη Κατάλληλων Νοσηλείας ή Εξοπλισμού Δομών
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ΑΡΙΘΜΟΣ ΑΝΑΦΕΡΟΜΕΝΩΝ ΑΛΛΩΝ
Μέση διάρκεια νοσηλείας
ΑΡΙΘΜΟΣ ΑΛΛΑΞΑΣΟΠΤΕΩΝ ΑΠΟΥΣΙΩΝ
Έκβαση Ασθενειών
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ΠΑΡΟΥΣΙΕΣ (ΣΚΟΡ) ΑΣΘΕΝΕΙΩΝ
Σημαίνουσες μη Gaidelliness (μέτρα & Νοσηλευτικά Πρωτόκολλα)
Ποσοστό Ενδονοσοκομειακών Ασθενών
Εναισθησία κοινωνικών
Κοινωνική Πλειοψηφία από Επιστημονική Κοινότητα
Κόστος
Ικανοποίηση Προσωπικού
Εργασιακές Στηγκρίσεις
Εκπαίδευση Νοσηλευτών
Κάλυψη Αναχείρηση Υλικών
Διαθέσιμοι Πόροι
Κοπιάστρα
Εν Ζωή Νοσηλευτών
Ομαλή Προσωπική & Κοινωνική Ζωή
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Αριθμός Τραυματοφορέων
Ανάλογη
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Ικανοποίηση Ασθενών
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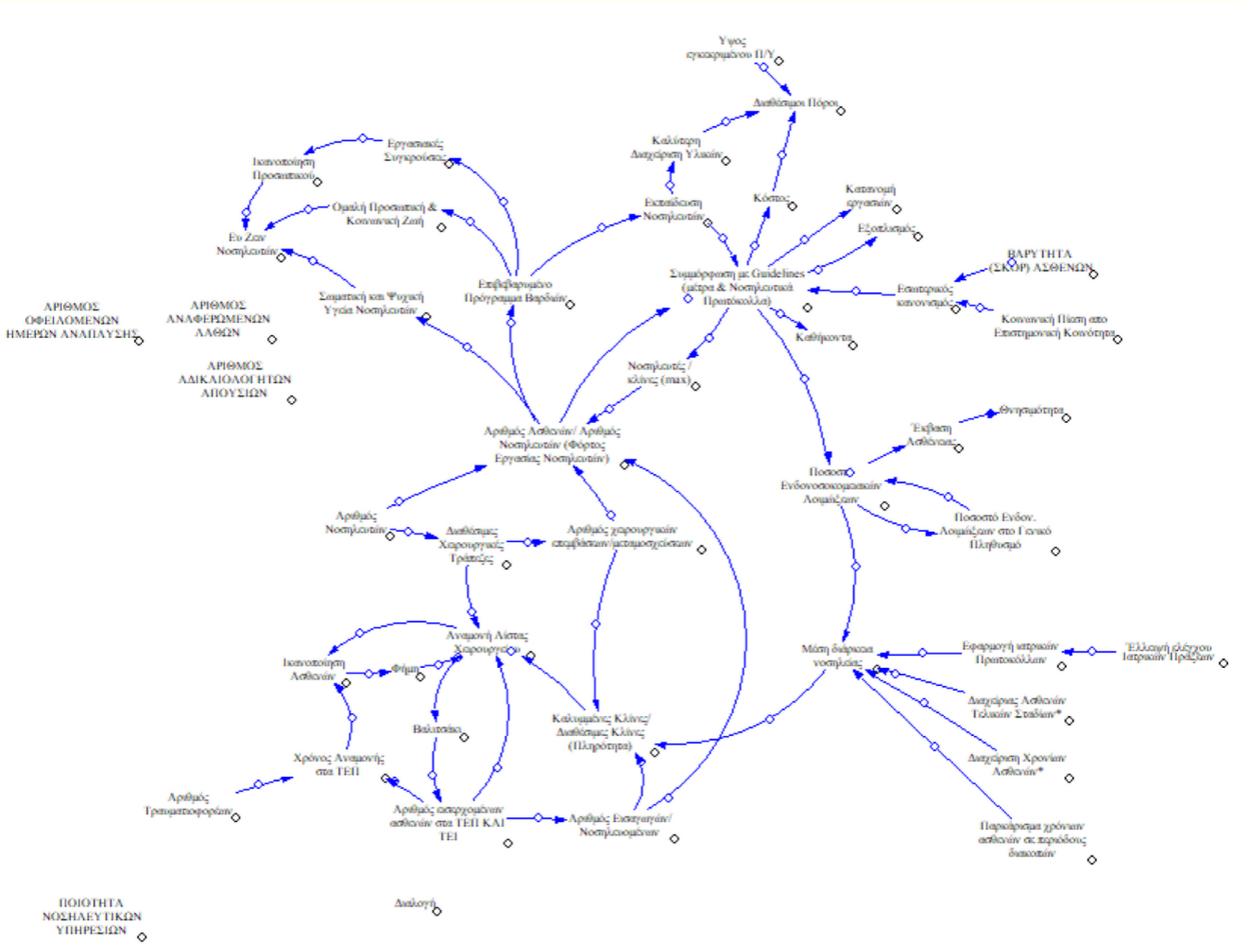
Αριθμός εισαγγελέων ασθενών στα ΤΕΙΙ ΚΑΙ ΤΕΙ
Αναμονή Λίστας Χειρουργείου
Βελτιστίαο

ΤΟ ΜΟΝΤΕΛΟ


Υψος εγκεκριμένου Π/Υ
Διαθέσιμοι Πόροι
Καλύτερη Διαχείριση Υλικών
Εκπαίδευση Νοσηλευτών
Κόστος
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Καθήκοντα
ΑΡΙΘΜΟΣ ΟΦΕΙΛΟΜΕΝΩΝ ΗΜΕΡΩΝ ΑΝΑΠΑΥΣΗΣ
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ΑΡΙΘΜΟΣ ΑΔΙΚΑΙΟΛΟΓΗΤΩΝ ΑΠΟΥΣΙΩΝ
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Ικανοποίηση Ασθενών
Φήμη
Μέση διάρκεια νοσηλείας
Εφαρμογή ιατρικών Πρωτοκόλλων
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Βαλτασάκι
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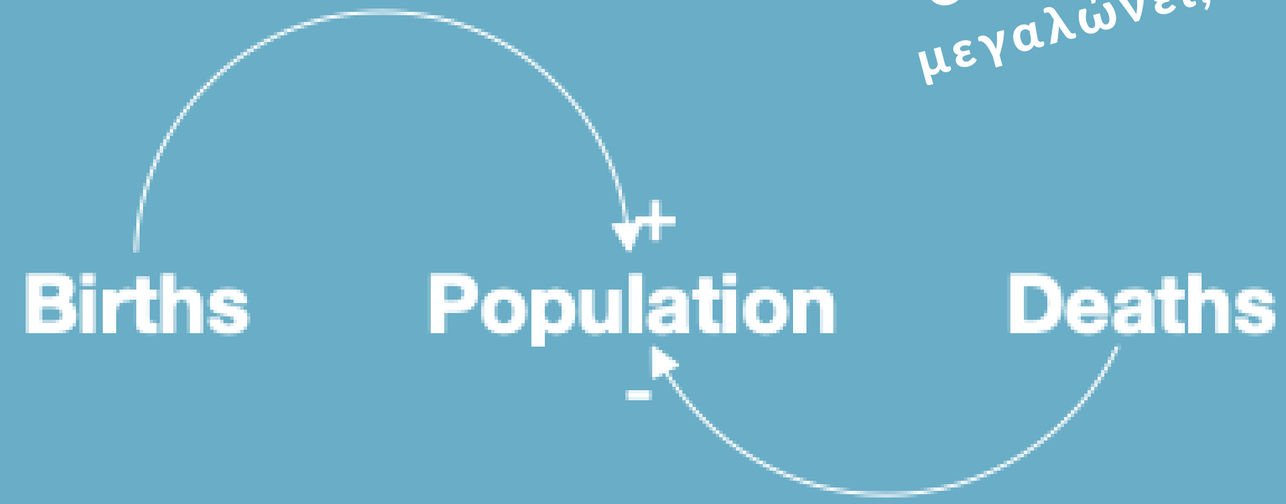
Αριθμός Τραυματιοφορέων
Αριθμός εισερχομένων ασθενών στα ΤΕΠ ΚΑΙ ΤΕΙ
Αριθμός Εισαγωγών/ Νοσηλευομένων
ΠΟΙΟΤΗΤΑ ΝΟΣΗΛΕΥΤΙΚΩΝ ΥΠΗΡΕΣΙΩΝ
Διαλογή

Αιτιώδεις Σύνδεσμοι

Θετική ή αρνητική σχέση

Tip:
"Όσο το ... μεγαλώνει, τόσο..."

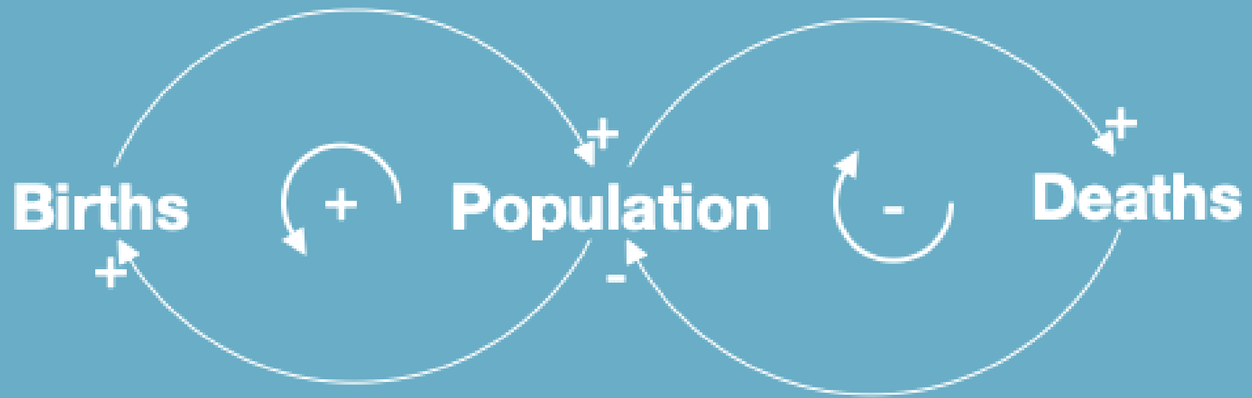


ΛΟΥΠΕΣ

Επαναλαμβανόμενοι Κύκλοι Ανάδρασης (Feedback Loops)

Αυτοενισχυόμενες (+) ή
Αυτοεξισορροπούμενες (-)

Tip:
Θετικό δε σημαίνει απαραίτητα "καλό"



ΨΑΧΝΟΝΤΑΣ ΤΙΣ ΛΟΥΠΕΣ ΣΤΟ ΜΟΝΤΕΛΟ ΜΑΣ

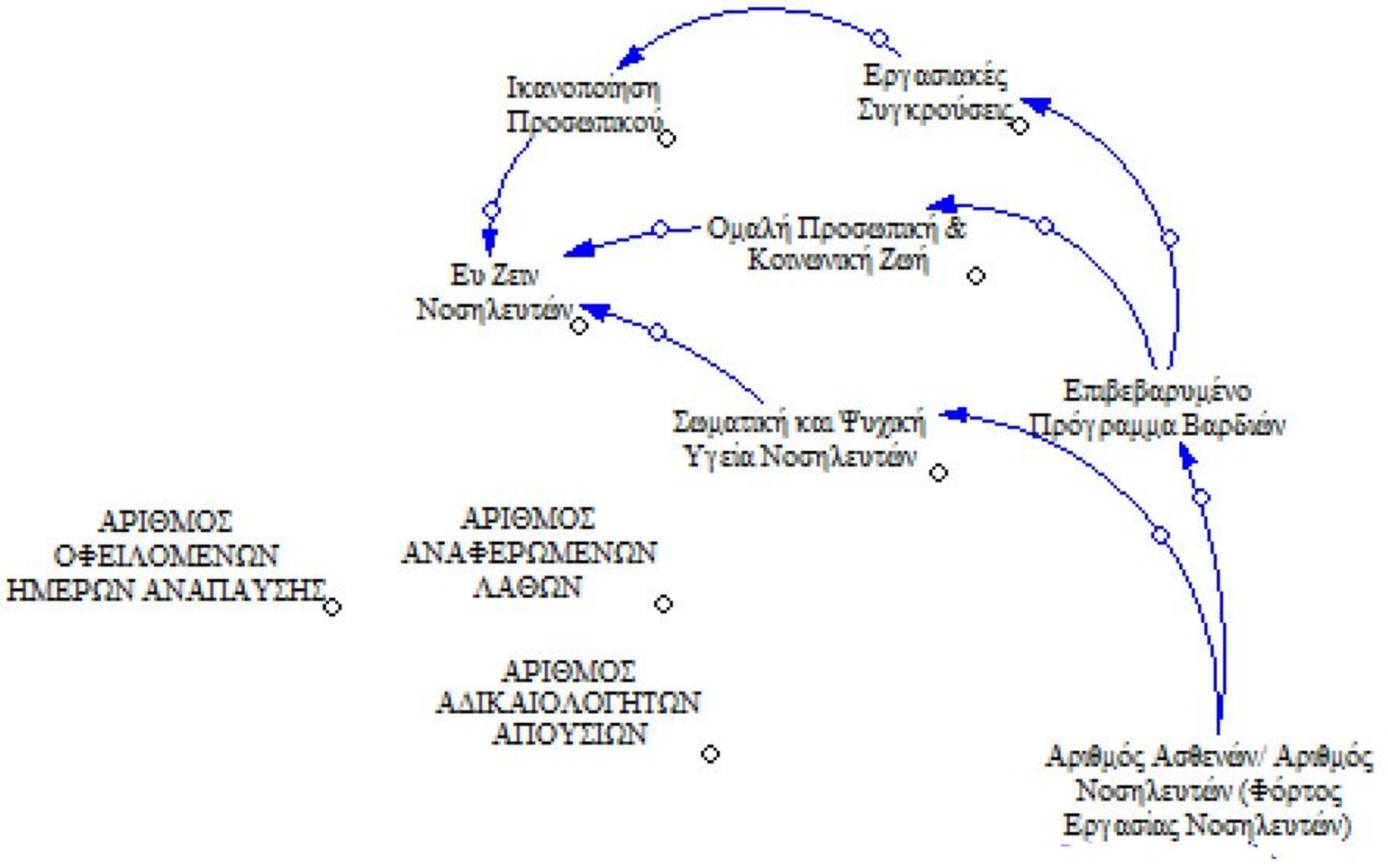
ΧΡΟΝΟΣ 5' - ΑΤΟΜΙΚΑ

Προσπαθήστε να βρείτε ή να δημιουργήσετε λούπες στο μοντέλο

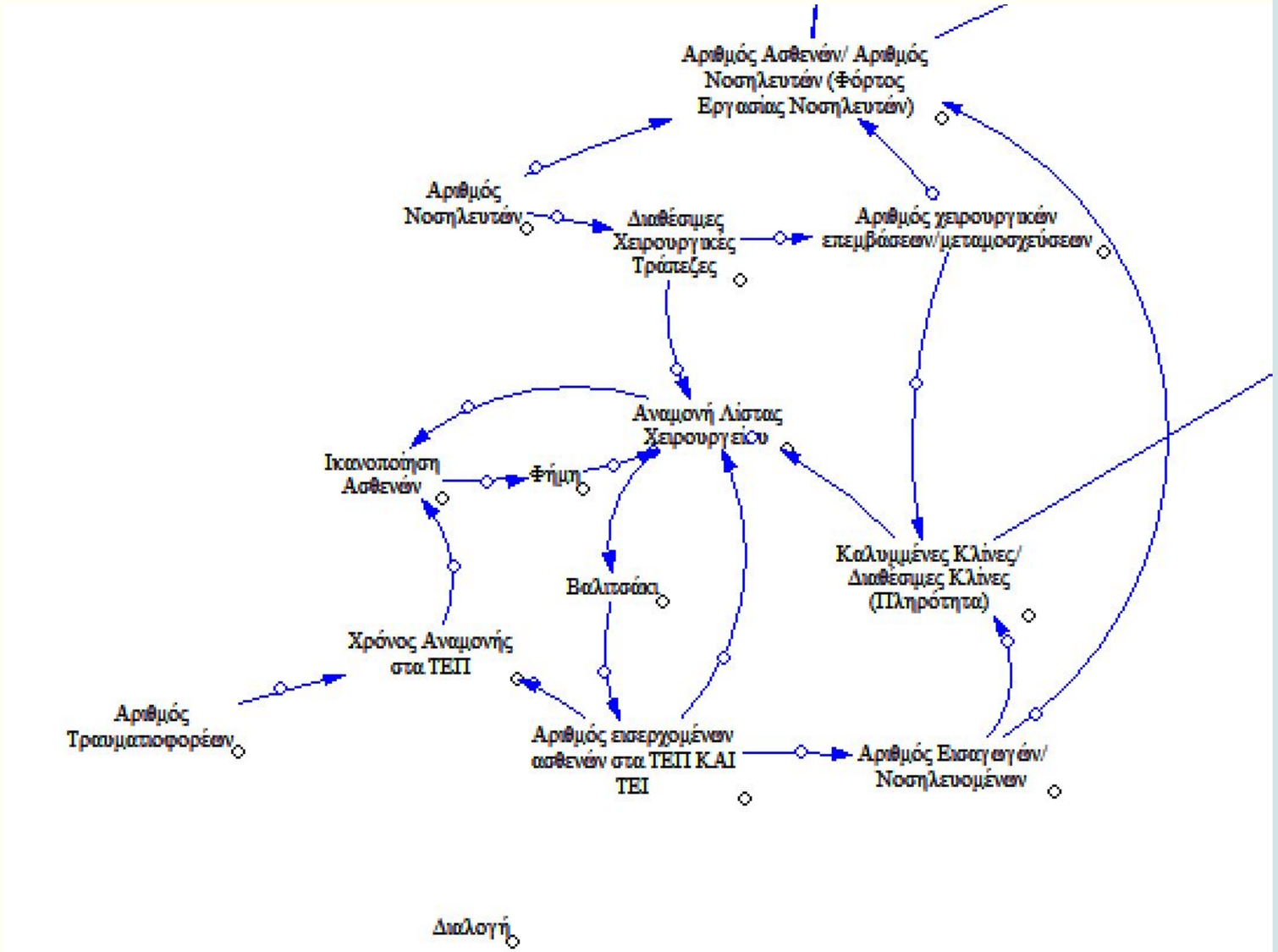
Tip: Μπορείτε να προσθέσετε ενδιάμεσες μεταβλητές, που δεν υπάρχουν αυτή τη στιγμή στο μοντέλο.

Παρουσίαση: 10'

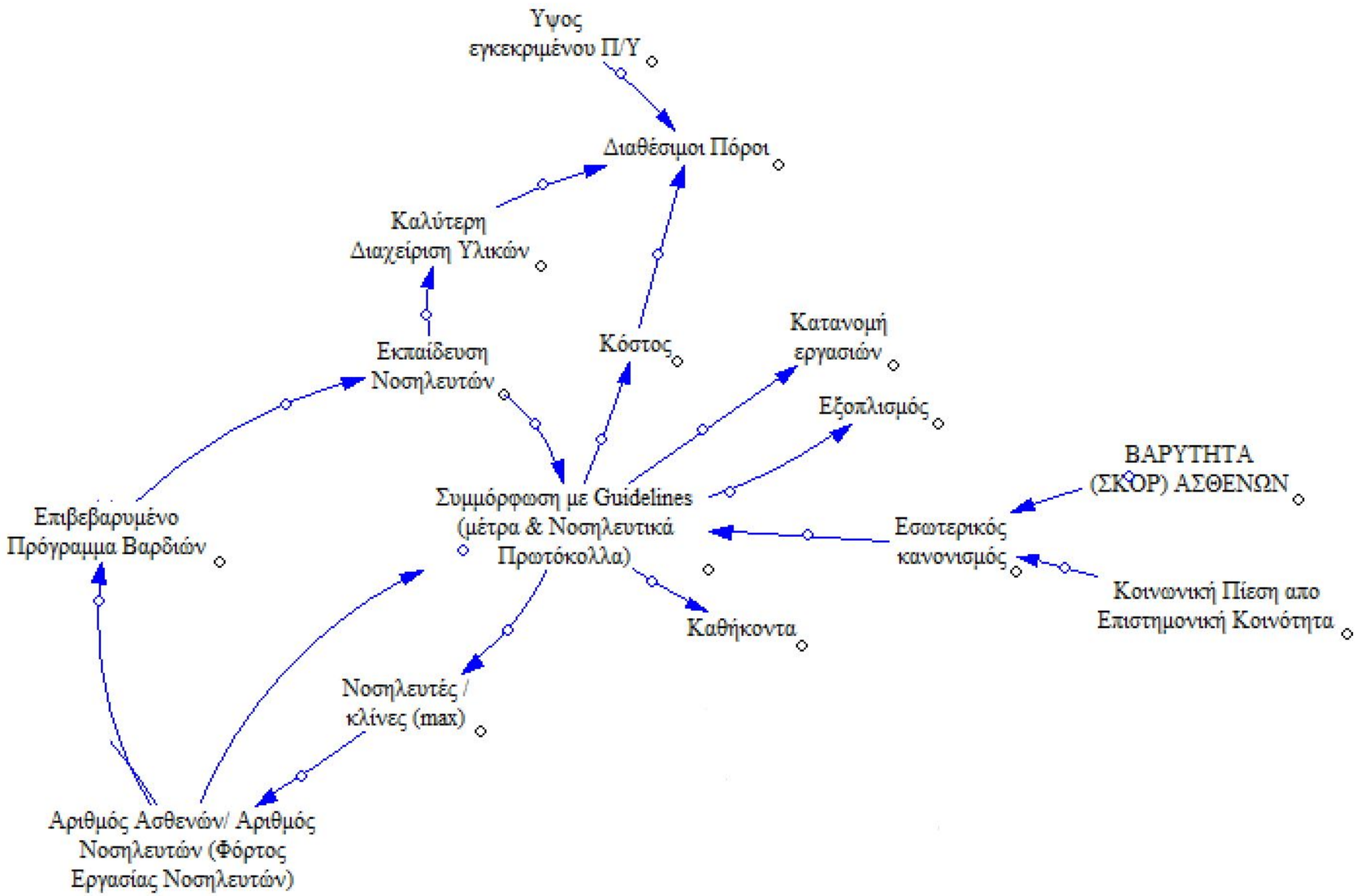
ΙΚΑΝΟΠΟΙΗΣΗ ΝΟΣΗΛΕΥΤΩΝ



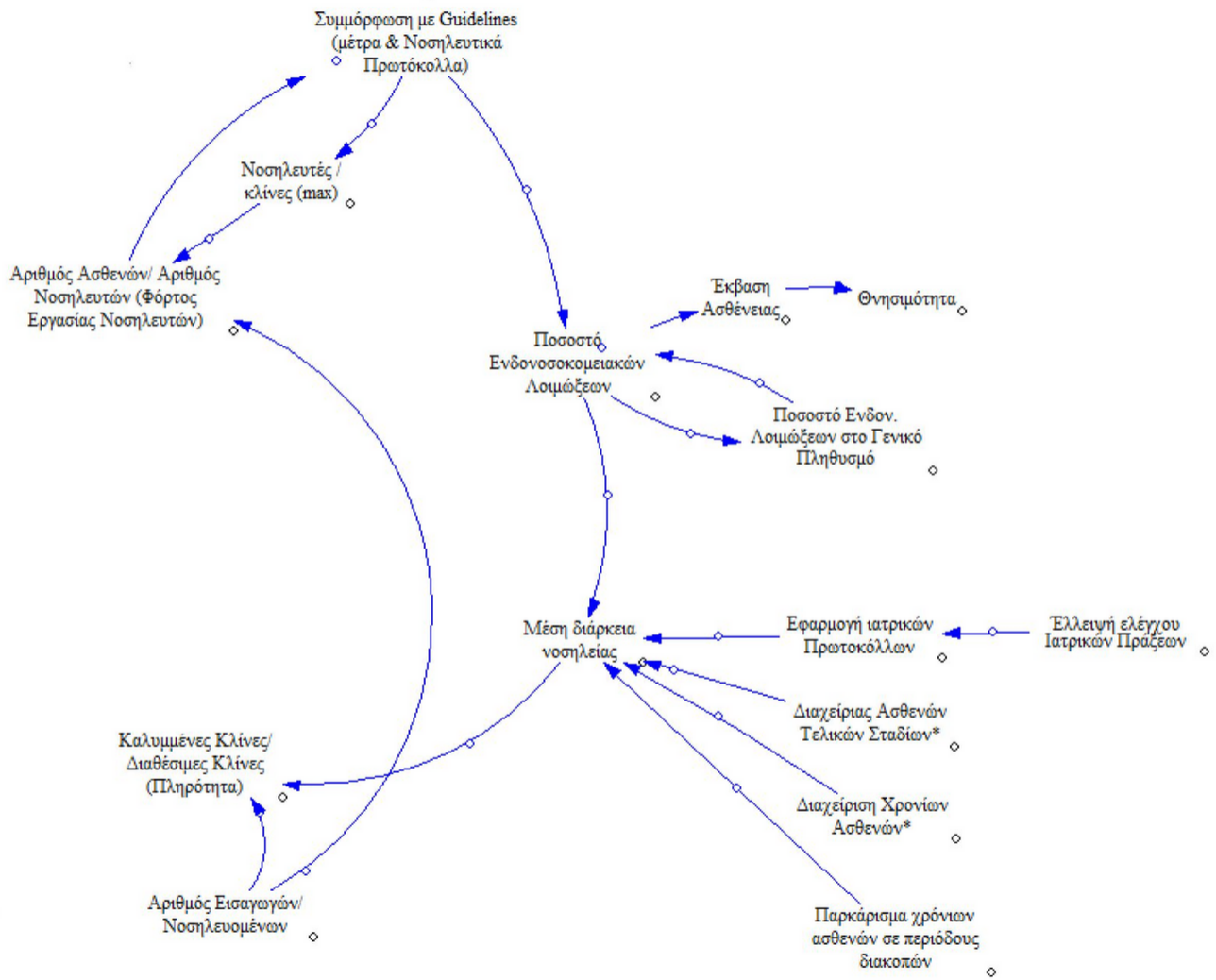
ΕΙΣΑΓΩΓΗ ΑΣΘΕΝΩΝ



GUIDELINES


Υψος
εγκεκριμένου Π/Υ
Διαθέσιμοι Πόροι
Καλύτερη
Διαχείριση Υλικών
Εκπαίδευση
Νοσηλευτών
Κόστος
Κατανομή
εργασιών
Εξοπλισμός
ΒΑΡΥΤΗΤΑ
(ΣΚΟΡ) ΑΣΘΕΝΩΝ
Συμμόρφωση με Guidelines
(μέτρα & Νοσηλευτικά
Πρωτόκολλα)
Επιβεβαρυμένο
Πρόγραμμα Βαρδιών
Εσωτερικός
κανονισμός
Κοινωνική Πίεση απο
Επιστημονική Κοινότητα
Καθήκοντα
Νοσηλευτές /
κλίνες (max)
Αριθμός Ασθενών/ Αριθμός
Νοσηλευτών (Φόρτος
Εργασίας Νοσηλευτών)

ΠΛΗΡΟΤΗΤΑ & ΜΔΝ



ΤΑ "STORIES" ΤΟΥ ΜΟΝΤΕΛΟΥ ΜΑΣ

ΧΡΟΝΟΣ 20' - ΟΜΑΔΑ

Επιλέξτε μία λούπα ο καθένας και περιγράψτε με δικά σας λόγια τι σημαίνει στην πράξη/ στην καθημερινή πρακτική.

ΔΙΑΛΕΙΜΜΑ 15'

ΔΟΜΗ
ΣΥΣΤΗΜΑΤΟΣ

ΑΠΟΤΕΛΕΣΜΑ

ΧΡΟΝΟΚΑΘΥΣΤΕΡΗΣΗ

ΠΡΟΒΛΗΜΑ

ΑΙΤΙΟ

ΣΥΜΒΑΝ

ΜΠΟΥΜΕΡΑΝΚ

ΣΥΣΣΩΡΕΥΣΗ ΧΡΕΩΝ

ΕΛΛΕΙΜΜΑΤΑ

ΧΡΟΝΟΚΑΘΥΣΤΕΡΗΣΗ

ΠΤΩΧΕΥΣΗ/ ΟΙΚΟΝΟΜΙΚΗ ΚΡΙΣΗ

ΜΠΟΥΜΕΡΑΝΚ

ΚΡΑΤΙΚΟΣ ΔΑΝΕΙΣΜΟΣ

ΑΙΤΙΕΣ

ΣΥΜΠΤΩΜΑΤΑ

ΑΠΟΤΕΛΕΣΜΑΤΑ

ΣΥΜΒΑΝΤΑ (ΣΥΝΕΠΕΙΕΣ)

ΣΗΜΑΝΤΙΚΕΣ ΧΡΟΝΟΚΑΘΥΣΤΕΡΗΣΕΙΣ

ΔΙΑΛΕΙΜΜΑ 15'

Ημερήσια Διάταξη

ΣΤΟΧΟΣ:

Να σχεδιάσουμε στρατηγικές επίλυσης του προβλήματος

ΑΝΑΣΚΟΠΗΣΗ ΤΟΥ ΜΟΝΤΕΛΟΥ

Το πρόβλημα, Αιτίες & Συνέπειες του προβλήματος

ΣΤΡΑΤΗΓΙΚΟΣ ΣΧΕΔΙΑΣΜΟΣ

Στρατηγικές Επίλυσης, Σημεία Παρέμβασης

ΙΕΡΑΡΧΗΣΗ & ΕΠΙΛΟΓΗ ΣΤΡΑΤΗΓΙΚΩΝ

...με βάση τη ευκολία εφαρμογής και το μακροπρόθεσμο αντίκτυπο

ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΣ ΕΠΟΜΕΝΩΝ ΕΝΕΡΓΕΙΩΝ

Ρόλοι, Ενέργειες, Χρονοδιάγραμμα

ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

Σημείο Παρέμβασης

Μια μεταβλητή στο μοντέλο μας που έχει περισσότερες πιθανότητες να βελτιώσει τη συμπεριφορά του μοντέλου.

...δηλαδή, μια μικρή αλλαγή σε αυτή τη μεταβλητή θα οδηγούσε σε μια μεγάλη αλλαγή στο επίπεδο ποιότητας.

Σημείο Παρέμβασης

1)<u>Μεταβλητή που μπορούμε ΜΟΝΟΙ ΜΑΣ να επηρεάσουμε</u>
(π.χ. υλικές αντί άυλες μεταβλητές)

<u>2)Αιτία</u> και όχι Σύμπτωμα

<u>3)Μακροπρόθεσμα</u> και όχι Βραχυπρόθεσμα αποτελέσματα

ΒΡΕΙΤΕ ΣΗΜΕΙΑ ΠΑΡΕΜΒΑΣΗΣ

ΧΡΟΝΟΣ 5' - ΑΤΟΜΙΚΑ

Καταγράψτε σε χαρτάκια σημεία παρέμβασης του μοντέλου για τη βελτίωση της ποιότητας των υπηρεσιών των μονάδων Εμφραγμάτων/ΜΝ/ΜΕΘ.

ΕΠΙΛΟΓΗ ΣΗΜΕΙΩΝ ΠΑΡΕΜΒΑΣΗΣ

ΧΡΟΝΟΣ 5' - ΣΕ ΔΥΑΔΕΣ

Επιλέξτε τα 3 πιο κρίσιμα, κατά τη γνώμη σας, σημεία παρέμβασης του μοντέλου, για τη βελτίωση της ποιότητας των υπηρεσιών των μονάδων Εμφραγμάτων/ΜΝ/ΜΕΘ.

Παρουσίαση: 20'

ΣΥΝΔΥΑΣΤΕ ΣΤΡΑΤΗΓΙΚΕΣ ΜΕ ΣΗΜΕΙΑ ΠΑΡΕΜΒΑΣΗΣ

ΧΡΟΝΟΣ 5' - ΔΥΑΔΕΣ

Κολλήστε τα χαρτάκια με τις στρατηγικές κάτω απο τα κρίσιμα Σημεία Παρέμβασης στον πίνακα που πιστεύετε οτι αντιστοιχούν. Βάλτε τις υπόλοιπες στο Πάρκινγκ.

Παρουσίαση: 20'

ΔΙΑΛΕΙΜΜΑ 15'

Ημερήσια Διάταξη

ΣΤΟΧΟΣ:

Να σχεδιάσουμε στρατηγικές επίλυσης του προβλήματος

ΑΝΑΣΚΟΠΗΣΗ ΤΟΥ ΜΟΝΤΕΛΟΥ

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...με βάση τη ευκολία εφαρμογής και το μακροπρόθεσμο αντίκτυπο

ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΣ ΕΠΟΜΕΝΩΝ ΕΝΕΡΓΕΙΩΝ

Ρόλοι, Ενέργειες, Χρονοδιάγραμμα

ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

ΒΑΘΜΟΛΟΓΗΣΗ ΣΤΡΑΤΗΓΙΚΩΝ

ΣΕ ΤΡΙΑΔΕΣ - 5'

Βαθμολογήστε τις στρατηγικές με βάση:

ΕΥΚΟΛΙΑ ΕΦΑΡΜΟΓΗΣ

1 2 3 4 5

χαμηλό υψηλό

ΜΑΚΡΟΠΡΟΘΕΣΜΟ ΑΝΤΙΚΤΥΠΟ

1 2 3 4 5

χαμηλό υψηλό

ΙΕΡΑΡΧΗΣΗ ΣΤΡΑΤΗΓΙΚΩΝ

ΟΜΑΔΑ - 15'

Βαθμολογήστε τις στρατηγικές με βάση:

ΕΥΚΟΛΙΑ ΕΦΑΡΜΟΓΗΣ

1 2 3 4 5

χαμηλό υψηλό

ΜΑΚΡΟΠΡΟΘΕΣΜΟ ΑΝΤΙΚΤΥΠΟ

1 2 3 4 5

χαμηλό υψηλό

ΕΠΙΛΟΓΗ ΣΤΡΑΤΗΓΙΚΩΝ

ΟΜΑΔΑ - 10'

Βαθμολογήστε τις στρατηγικές με βάση:

ΕΥΚΟΛΙΑ ΕΦΑΡΜΟΓΗΣ

1 2 3 4 5

χαμηλό υψηλό

ΜΑΚΡΟΠΡΟΘΕΣΜΟ ΑΝΤΙΚΤΥΠΟ

1 2 3 4 5

χαμηλό υψηλό

Ημερήσια Διάταξη

ΣΤΟΧΟΣ:

Να σχεδιάσουμε στρατηγικές επίλυσης του προβλήματος

ΑΝΑΣΚΟΠΗΣΗ ΤΟΥ ΜΟΝΤΕΛΟΥ

Το πρόβλημα, Αιτίες & Συνέπειες του προβλήματος

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ΙΕΡΑΡΧΗΣΗ & ΕΠΙΛΟΓΗ ΣΤΡΑΤΗΓΙΚΩΝ

...με βάση τη ευκολία εφαρμογής και το μακροπρόθεσμο αντίκτυπο

ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΣ ΕΠΟΜΕΝΩΝ ΕΝΕΡΓΕΙΩΝ

Ρόλοι, Ενέργειες, Χρονοδιάγραμμα

ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΣ ΕΠΟΜΕΝΩΝ ΕΝΕΡΓΕΙΩΝ

ΧΡΟΝΟΣ 10' - ΔΥΑΔΕΣ

Επιλέξτε μια από τις στρατηγικές και κάντε ένα αναλυτικό πλάνο επόμενων ενεργειών για την επίτευξή της, που θα περιέχει τα εξείς πεδία: ΕΝΕΡΓΕΙΑ, ΥΠΕΥΘΥΝΗ (μία απο τις δύο), ΕΜΠΛΕΚΟΜΕΝΟΙ, ΠΡΟΘΕΣΜΙΑ

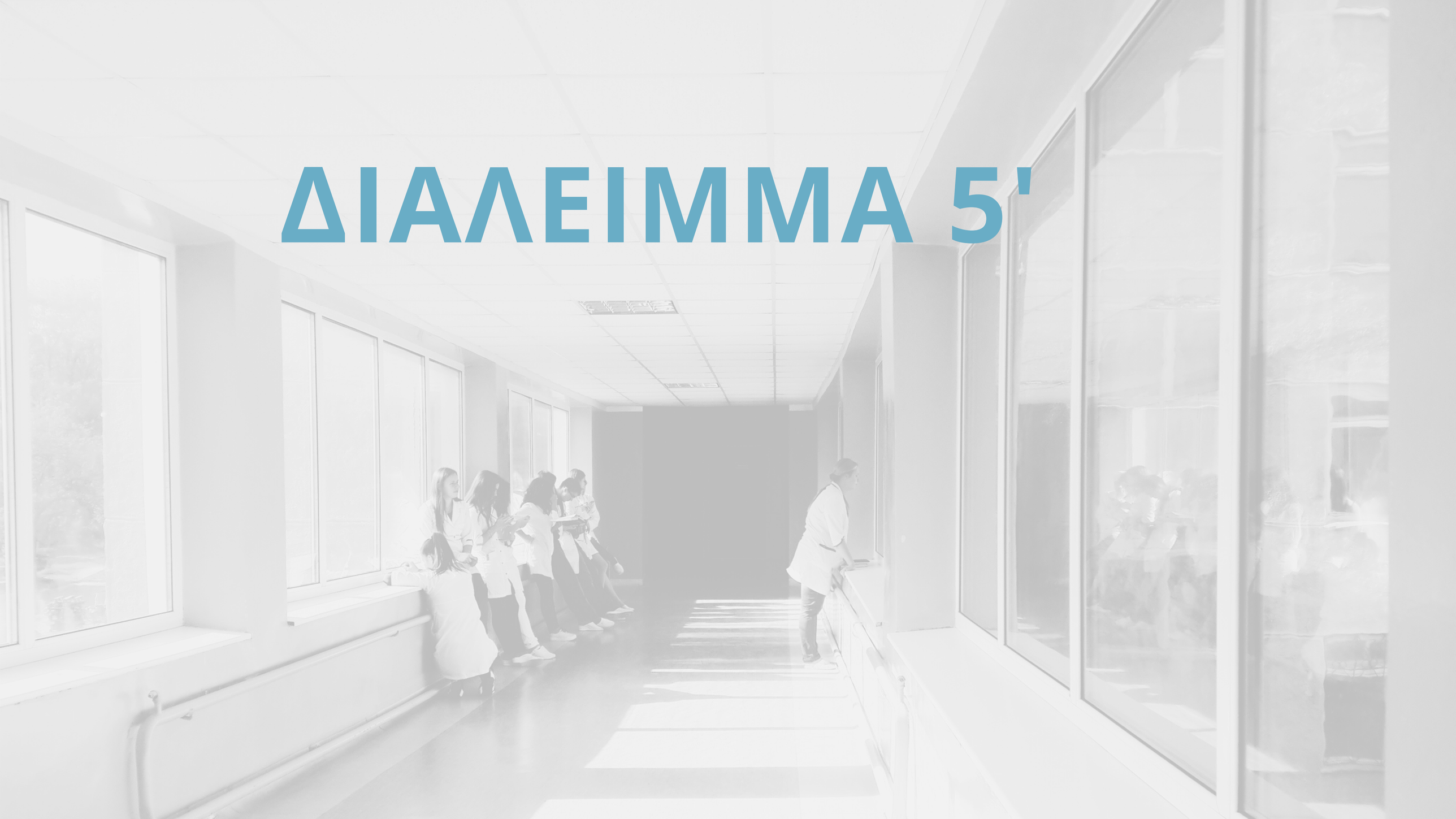
Παρουσίαση: 20'

ΑΝΑΚΕΦΑΛΑΙΩΣΗ

ΧΡΟΝΟΣ 10' - ΑΤΟΜΙΚΑ

Επιλέξτε μία στρατηγική και περιγράψτε με δικά σας λόγια γιατί την επέλεξε η ομάδα και πως θα επιτευχθεί.

ΔΙΑΛΕΙΜΜΑ 5'



Ημερήσια Διάταξη

ΣΤΟΧΟΣ:

Να σχεδιάσουμε στρατηγικές επίλυσης του προβλήματος

ΑΝΑΣΚΟΠΗΣΗ ΤΟΥ ΜΟΝΤΕΛΟΥ

Το πρόβλημα, Αιτίες & Συνέπειες του προβλήματος

ΣΤΡΑΤΗΓΙΚΟΣ ΣΧΕΔΙΑΣΜΟΣ

Στρατηγικές Επίλυσης, Σημεία Παρέμβασης

ΙΕΡΑΡΧΗΣΗ & ΕΠΙΛΟΓΗ ΣΤΡΑΤΗΓΙΚΩΝ

...με βάση τη ευκολία εφαρμογής και το μακροπρόθεσμο αντίκτυπο

ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΣ ΕΠΟΜΕΝΩΝ ΕΝΕΡΓΕΙΩΝ

Ρόλοι, Ενέργειες, Χρονοδιάγραμμα

ΚΛΕΙΣΙΜΟ

Ανακαφαλαίωση, Συζήτηση, Σχόλια

Τα προχτεσινά μας επιτεύγματα

ΚΟΙΝΟΣ ΟΡΙΣΜΟΣ, ΟΠΤΙΚΗ & ΚΑΤΑΝΟΗΣΗ ΤΟΥ ΠΡΟΒΛΗΜΑΤΟΣ ΠΟΙΟΤΗΤΑΣ

ΚΟΙΝΗ ΟΠΤΙΚΗ & ΚΑΤΑΝΟΗΣΗ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΩΣ ΣΥΣΤΗΜΑ

ΠΡΟΚΑΤΑΡΚΤΙΚΟ ΜΟΝΤΕΛΟ ΠΟΙΟΤΗΤΑΣ

Στην σημερινή συνεδρία:

ΤΕΛΕΙΟΠΟΙΗΣΗ
ΜΟΝΤΕΛΟΥ ΠΟΙΟΤΗΤΑΣ

ΣΗΜΕΙΑ ΠΑΡΕΜΒΑΣΗΣ

ΣΤΡΑΤΗΓΙΚΕΣ & ΠΟΛΙΤΙΚΕΣ
ΓΙΑ ΒΕΛΤΙΩΣΗ ΤΟΥ
ΠΡΟΒΛΗΜΑΤΟΣ

ΚΛΕΙΣΙΜΟ

15' -ΑΤΟΜΙΚΑ

-Συναισθήματα ;

-Προσδοκίες/Φόβοι;

-Κάτι που σας έμεινε και θα θυμάστε; Το πρώτο που σας έρχεται στο μυαλό

ΕΡΩΤΗΜΑΤΟΛΟΓΙΑ

15' -ΑΤΟΜΙΚΑ

ΣΑΣ ΕΥΧΑΡΙΣΤΟΥΜΕ ΘΕΡΜΑ ΓΙΑ ΤΗ ΣΥΝΕΡΓΑΣΙΑ

Μέρος ΙΙ: Πιστοποιητικό συγκατάθεσης

Δήλωση ενήμερης συγκατάθεσης από συμμετέχοντα

Ως εμπλεκόμενος/ενδιαφερόμενος σε δημόσιο νοσοκομείο, έχω προσκληθεί να συμμετάσχω στην έρευνα της κας Αγγελικής Λενάκακη, υποψήφιας διδάκτωρ του πανεπιστημίου του Παλέρμο, για τη διδακτορική της διατριβή με τίτλο "Η υπέρβαση των ορίων της παραδοσιακής μέτρησης απόδοσης στα δημόσια νοσοκομεία: Μια δυναμική προσέγγιση διαχείρισης της απόδοσης για τη βελτίωση της ποιότητας των νοσοκομειακών υπηρεσιών».

Η φύση και ο σκοπός της έρευνας που διεξάγεται στο Νοσοκομείο, στο πλαίσιο της διδακτορικής διατριβής της κας Λενακάκη, μου εξηγήθηκε και συμφωνώ οικειοθελώς να συμμετάσχω πλήρως στις συνεδρίες μοντελοποίησης και στις συνεντεύξεις που διεξάγει η ερευνήτρια κα Λενακάκη, καθώς επίσης και να συμπληρώσω τα ερωτηματολόγια και τα βιβλία εργασίας, τα οποία θα συμβάλλουν στην διδακτορική της έρευνα και θα αποτελέσουν μέρος της διδακτορικής διατριβής και των ενδεχόμενων δημοσιεύσεων της κ. Αγγελικής Λενάκακη.

Συμφωνώ να καταγραφούν και να ηχογραφηθούν οι συνεδρίες μοντελοποίησης και οι συνεντεύξεις για ερευνητικούς σκοπούς, και κατανοώ ότι αν και η φωνή μου θα ηχογραφηθεί, η ταυτότητά μου δεν θα αποκαλυφθεί σε καμία δημοσίευση, έγγραφο, καταγραφή ή οποιοδήποτε άλλο μέσο που σχετίζονται με αυτή την έρευνα. Μόνο η ερευνήτρια κ. Λενάκακη θα έχει πρόσβαση στο ηχογραφημένο υλικό.

Έχω διαβάσει και κατανοήσει τις παραπάνω πληροφορίες του ενημερωτικού δελτίου. Είχα την ευκαιρία να θέσω ερωτήσεις σχετικά με αυτό και όλες οι ερωτήσεις που έθεσα έχουν απαντηθεί ικανοποιητικά. Συμφωνώ πλήρως και οικειοθελώς να συμμετάσχω σε αυτό το ερευνητικό πρόγραμμα, συμφωνώ ως προς την χρησιμοποίηση και επεξεργασία των προσωπικών μου δεδομένων για ερευνητικούς σκοπούς και συμφωνώ να σεβασθώ την εμπιστευτικότητα των ταυτοτήτων των άλλων συμμετεχόντων και των πληροφοριών που μου αποκαλύπτονται κατά τη διάρκεια των συνεδριών ομαδικής μοντελοποίησης.

Όνομα / Επώνυμο Συμμετέχοντα Χριστίνα Καρούνη

Υπογραφή Συμμετέχοντα _____

Ημερομηνία 24/02/20
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Δήλωση του ερευνητή / ατόμου που λαμβάνει τη συγκατάθεση

Έχω διαβάσει με ακρίβεια το ενημερωτικό δελτίο στον δυνητικό συμμετέχοντα και κατά το μέγιστο των δυνατοτήτων μου επιβεβαίωσα ότι ο συμμετέχων κατανοεί ότι θα γίνουν τα εξής:
1. Τρεις Ομαδικές Συνεδρίες Μοντελοποίησης, διάρκειας πέντε ωρών η καθεμία.
2. Μία ή δύο Συνεντεύξεις, διάρκειας περίπου μίας ώρας η καθεμία.
3. Συμπλήρωση ορισμένων ερωτηματολογίων και βιβλίων εργασίας.

Επιβεβαιώνω ότι δόθηκε στον συμμετέχοντα η ευκαιρία να υποβάλει ερωτήσεις σχετικά με την έρευνα και ότι όλες οι ερωτήσεις που τέθηκαν από τον συμμετέχοντα έχουν απαντηθεί σωστά και με τον καλύτερο δυνατό τρόπο. Επιβεβαιώνω ότι ο συμμετέχων δεν εξαναγκάσθηκε με κανένα τρόπο ούτε πιέσθηκε να δώσει τη συγκατάθεσή του, αλλα αντίθετα η συγκατάθεση δόθηκε ελεύθερα και οικειοθελώς.

Ένα αντίγραφο αυτού του πιστοποιητικού συγκατάθεσης έχει παρασχεθεί στον συμμετέχοντα.

Όνομα ερευνητή / προσώπου που λαμβάνει τη συγκατάθεση _____
Υπογραφή ερευνητή / που λαμβάνει τη συγκατάθεση _____
Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ ΚΟΙΝΟΥ ΠΛΑΙΣΙΟΥ ΑΞΙΟΛΟΓΗΣΗΣ
για ΣΥΜΠΛΗΡΩΣΗ ΑΠΟ ΚΟΙΝΩΝΙΚΟΥΣ ΦΟΡΕΙΣ

Υποκριτήριο 8.1 Σκεφτείτε τι επιτυγχάνει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **Μετρήσεων Αντίληψης**

Οι μετρήσεις αντίληψης επικεντρώνονται στην αντίληψη της κοινότητας, για τις επιδόσεις της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από εμπλεκόμενους εκτός Νοσοκομείου. Η μέτρηση της αντίληψης συνιστά ένδειξη της αποτελεσματικότητας των κοινωνικών και περιβαλλοντικών στρατηγικών. Περιλαμβάνει την οπτική γωνία για τη διαφάνεια, τον αντίκτυπο για την ποιότητα ζωής και την ποιότητα της δημοκρατίας, την οπτική για τη δεοντολογία ως προς την υποστήριξη των πολιτών/ασθενών, την προσέγγιση και τα αποτελέσματα για τα κοινωνικά και περιβαλλοντικά θέματα.

Α/Α	Ερώτηση	Απάντηση					
		Καθόλου			(0)		
		Πολύ Λίγο			(1)		
		Λίγο			(2)		
		Πολύ			(3)		
		Πάρα Πολύ			(4)		
		Απόλυτα			(5)		
1	Σε ποιο βαθμό θεωρείτε ότι το κοινό ενημερώνεται για συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)στη βελτίωση της ποιότητας ζωής των πολιτών της περιοχής εντός της οποίας δραστηριοποιείται; (π.χ. πρόγραμμα προαγωγής υγείας, δράσεις για ευπαθείς ομάδες, κ.λπ.)	0	1	2	3	4	5
2	Σε ποιο βαθμό κρίνετε τη δημόσια εικόνα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) ως θετική;	0	1	2	3	4	5
3	Σε ποιο βαθμό κρίνετε ικανοποιητικά τα αποτελέσματα των επαφών και της συνεργασίας της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με τους τοπικούς κοινωνικούς φορείς;	0	1	2	3	4	5
4	Σε ποιο βαθμό θεωρείτε ικανοποιητικές τις αλλαγές που επέρχονται στη λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), ως αποτέλεσμα της προσπάθειας ανταπόκρισης στις μεταβολές του κοινωνικού περιβάλλοντος;	0	1	2	3	4	5
5	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), την οικονομία της περιοχής εντός της οποίας δραστηριοποιείται; (*π.χ. δημιουργία/προσέλκυση μικρών επιχειρηματικών δραστηριοτήτων που έχουν χωροταξική εγγύτητα, δημιουργία δημόσιων δρόμων ή μέσων μαζικής μεταφοράς που εξυπηρετούν και τους υφιστάμενους οικονομικά δρώντες*).	0	1	2	3	4	5
6	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)την κοινωνία της περιοχής εντός της οποίας δραστηριοποιείται, λαμβάνοντας υπόψη την ποιότητα της δημοκρατικής συμμετοχής των πολιτών;	0	1	2	3	4	5
7	Σε ποιο βαθμό θεωρείτε ικανοποιητική την υποστήριξη των Α.Μ.Ε.Α. από το τη Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ);	0	1	2	3	4	5
8	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη λειτουργία της	0	1	2	3	4	5

	Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την προστασία του περιβάλλοντος; (*προσπάθειες εξοικονόμησης ενέργειας, χρήση εναλλακτικών πηγών ενέργειας, διαχείριση αποβλήτων, συμμόρφωση σε περιβαλλοντικές προδιαγραφές, κ.τ.λ.*)						
9	Σε ποιο βαθμό θεωρείτε ότι η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)είναι ανοικτή σε τρίτους και διαφανής; (*π.χ. τήρηση αρχών/αξιών όπως ισότητα, συνέχεια, κ.λπ.*)	0	1	2	3	4	5
10	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη δημοσιογραφική κάλυψη των δραστηριοτήτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.;	0	1	2	3	4	5

Υποκριτήριο 8.2 Σκεφτείτε τι επιτυγχάνει την Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **μετρήσεων απόδοσης σχετικά με την κοινωνία**

Οι μετρήσεις απόδοσης εστιάζουν στα μέτρα που χρησιμοποιούνται από το Νοσοκομείο για να ελέγξει, να κατανοήσει, να προβλέψει και να βελτιώσει τις επιδόσεις σχετικά με την κοινωνική του ευθύνη. Θα πρέπει να δοθεί μια σαφής ένδειξη της αποτελεσματικότητας των προσεγγίσεων του Νοσοκομείου, για τα κοινωνικά θέματα. Οι μετρήσεις απόδοσης μπορούν να εξετάζουν τη δεοντολογία, τις πρωτοβουλίες και τα αποτελέσματα της πρόληψης των κινδύνων για την υγεία, τις πρωτοβουλίες για την ανταλλαγή γνώσεων, τις πρωτοβουλίες για τη διατήρηση των πόρων και τη μείωση των περιβαλλοντικών επιπτώσεων κ.λπ.

Α/Α	Ερώτηση	Απάντηση	
		Καθόλου	(0)
		Πολύ Λίγο	(1)
		Λίγο	(2)
		Πολύ	(3)
		Πάρα Πολύ	(4)
		Απόλυτα	(5)

1	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι σχέσεις με άλλα (αντίστοιχα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)) Τμήματα και κοινωνικούς φορείς, αρμόδιες αρχές, κ.λπ;	0	1	2	3	4	5
2	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι προσπάθειες που καταβάλλει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την αντιμετώπιση των προβλημάτων ευπαθών ομάδων πληθυσμού; (*συμβολή Γραφείου Προστασίας Δικαιωμάτων Ληπτών Υπηρεσιών Υγείας στις ευπαθείς ομάδες, κοινωνική υπηρεσία, κ.λπ.*)	0	1	2	3	4	5
3	Σε ποιο βαθμό κρίνετε ικανοποιητική την κάλυψη των θεμάτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.; (έχει αναφερθεί η ίδια ερώτηση πιο πάνω πεδίο 10)	0	1	2	3	4	5
4	Σε ποιο βαθμό κρίνετε ικανοποιητική την συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) στον σχεδιασμό, στη χρηματοδότηση και στην υλοποίηση διεθνών προγραμμάτων και στη συμμετοχή των εργαζομένων σε φιλανθρωπικές δραστηριότητες	0	1	2	3	4	5
5	Σε ποιο βαθμό ενθαρρύνει την Μονάδα	0	1	2	3	4	5

	(Εμφραγμάτων/ΜΝ/ΜΕΘ), τους υπαλλήλους του, αλλά και τους πολίτες/ασθενείς, που έρχονται σε επαφή με αυτό να ασχολούνται με κοινωνικά ζητήματα και να δραστηριοποιούνται στο χώρο της κοινωνίας των πολιτών/ασθενών;						
6	Σε ποιο βαθμό θεωρείτε παραγωγική την ανταλλαγή γνώσης και εμπειριών της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με κοινωνικούς φορείς;	0	1	2	3	4	5
7	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ) αναλαμβάνει πρωτοβουλίες πρόληψης κινδύνων υγείας και ατυχημάτων, για τους υπαλλήλους , αλλά και για τους πολίτες/ασθενείς με τους οποίους συναλλάσσεται; (λήψη προληπτικών μέτρων έναντι κινδύνων, καταπολέμηση καπνίσματος, συνεργασία με «φίλιες» δυνάμεις στην αντιμετώπιση Εκτάκτων Αναγκών, παρεμβάσεις Επιτροπής Νοσοκομειακών Λοιμώξεων, κ.λπ.)	0	1	2	3	4	5
8	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ)έχει εκπονήσει/σχεδιάσει δράσεις για τη διαχείριση των πόρων και για την προστασία του περιβάλλοντος (ανακύκλωση, περιβαλλοντικά πρότυπα, ενέργεια κτλ);	0	1	2	3	4	5

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΠΡΙΝ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα ΚΑΡΟΛΙΝΑ ΧΑΪΔΑΪΔΑ

Υπογραφή Συμμετέχοντα _____

Ημερομηνία 26/02/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε ποιο θεωρείτε εσείς ως το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Χαμηλότερη ποιότητα νοσηλευτικών υπηρεσιών από την αναμενόμενη

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

- Αντικειμενική προσέγγιση αξιών
- ~~Αντικ~~ Υποκειμενικότητα

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

-Εξάπλωση προσωπικού
-Χαμηλότερη ποιότητα από την επιθυμητή νοσηλευτικής φροντίδας ασθενών.
-Χαμηλότερη ικανοποίηση ασθενών.

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

- Προσλήψεις νοσηλευτικού προσωπικού
- Μεγαλύτερη επιμέρωση για τις αρχές Πρωτοβάθμιας φροντίδας, προς ~~σ~~ ολοκλήρωση των νοσηλευτικών ~~ιδρυμάτων~~.

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΜΕΤΑ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα Χρυσαΐδα Καρούντζου

Υπογραφή Συμμετέχοντα _____

Ημερομηνία 28/02/20
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Χαμηλότερη ποιότητα υγειονομικής φροντίδας από την επιθυμητή

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

- Υποστελέχωση - έλλειψη προσωπικού
- Χαμηλή ικανοποίηση προσωπικού
- Εξουδέτωση προσωπικού
- Μη συμμετοχή σε ενδοχειρήσεις εκπαίδευση λόγω έλλειψης προσωπικού γ' χρόνου.

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

- Χαμηλότερη ικανοποίηση ασθενών
- Χαμηλότερη ικανοποίηση προσωπικού
- Μείωση της πίεσης αλληλεπιδράσεων σε guidelines & πρωτοκόλλα
- Συγκρούσεις προσωπικού & ασθενών με προσωπικό
- Άγχος των γιατρών

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

- Πρόσληψη προσωπικού
- Παροχή κινήτρων στο προσωπικό
- Διοχέτευση ασθενών προς εναλλακτικές δομές
- Επιβάρυνση προσωπικού

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερωτηματολόγιο CICC

Αγαπητέ/ή συμμετέχων/ουσα στη συνεδρία ομαδικής μοντελοποίησης,

Αυτό το ερωτηματολόγιο αξιολογεί τη χρήση της μεθόδου ομαδικής μοντελοποίησης (GMB) στη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.

Αυτό το ερωτηματολόγιο εξετάζει τον επείγοντα χαρακτήρα του προβλήματος που διακυβεύεται, τα αποτελέσματα των συνεδριών μοντελοποίησης, τις επιπτώσεις των διαφόρων πτυχών της κάθε συνεδρίας, την ποιότητα της διαδικασίας μοντελοποίησης και τις προτάσεις για μελλοντικές συνεδρίες. Σας προσκαλούμε ευγενικά να απαντήσετε στις ερωτήσεις αυτές όσο καλύτερα μπορείτε. Τα αποτελέσματα αυτού του ερωτηματολογίου θα χρησιμοποιηθούν για τη βελτίωση της μεθόδου ομαδικής μοντελοποίησης που χρησιμοποιήθηκε (Group Model Building – GMB). Προτού ξεκινήσετε να αξιολογείτε τις συνεδρίες, θα θέλαμε να σας ζητήσουμε ορισμένες βασικές πληροφορίες.

Όλες οι πληροφορίες είναι εμπιστευτικές.

Η ημερομηνία γέννησής μου είναι 25/02/79
Είμαι μέλος αυτής της οργάνωσης (Νοσοκομείο) από 2005
Η θέση/δουλειά μου σε αυτόν τον οργανισμό (Νοσοκομείο) είναι Νοσηλεύτρια.

Σας ευχαριστώ θερμά για την συνεργασία.

Αποτελέσματα της διαδικασίας μοντελοποίησης

Τα ακόλουθα ερωτήματα αποσκοπούν κυρίως στις ομαδικές συζητήσεις που διεξήχθησαν κατά την διάρκεια των συνεδριών μοντελοποίησης. Αυτά τα ερωτήματα αναφέρονται επίσης στα αποτελέσματα της ανάλυσης δεδομένων και των προσομοιώσεων. Οι απαντήσεις για τις ακόλουθες ερωτήσεις εμπίπτουν σε μία από τις πέντε κατηγορίες:

συμφωνώ απόλυτα (5)
συμφωνώ (4)
δε συμφωνώ ούτε διαφωνώ (3)
διαφωνώ (2)
διαφωνώ έντονα (1)

(Προσοχή: αντεστραμμένη κλίμακα Λικερτ, δηλαδή 5→1 αντί 1→5)

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η οπτική μου για το πρόβλημα έχει αυξηθεί λόγω της διαδικασίας μοντελοποίησης.		✓			
2. Πιστεύω ότι, εξαιτίας αυτών των συνεδριών, έχουμε φτάσει σε μια κοινή οπτική για το πρόβλημα.		✓			
3. Συμφωνώ με τα αποτελέσματα / συμπεράσματα που προέκυψαν κατά τη διαδικασία μοντελοποίησης, σε γενικές γραμμές.		✓			
4. Η διαδικασία μοντελοποίησης μου έδωσε μια καλύτερη εικόνα για τη σύνδεση μεταξύ των στοιχείων που συνθέτουν το πρόβλημα.		✓			
5. Το μοντέλο που αναπτύχθηκε ήταν αποτέλεσμα της ενσωμάτωσης διαφορετικών απόψεων και ιδεών των συμμετεχόντων.		✓			
6. Εάν εγώ και άλλοι στην οργάνωση χρησιμοποιούσαμε την ίδια προσέγγιση στο σχεδιασμό και στην αντιμετώπιση των προβλημάτων μας, όλοι θα ακολουθούσαν πιστά αυτό το σχέδιο στα φυσικά συμπεράσματά του.	✓				
7. Ως αποτέλεσμα της διαδικασίας μοντελοποίησης **δεν** είναι ακόμα σαφές για μένα ποιες είναι οι βαθιές αιτίες του προβλήματος.					✓
8. Η διαδικασία μοντελοποίησης με βοήθησε στην κατανόηση των απόψεων των άλλων συμμετεχόντων.		✓			
9. Δεν επιτεύχθηκε καμία συμφωνία επι των πραγμάτων.				✓	
10. Η χρήση του μοντέλου βοήθησε στην επικοινωνία μεταξύ των συμμετεχόντων σχετικά με το πρόβλημα.		✓			
11. Οι απόψεις μας είναι πιο κοντά λόγω της διαδικασίας μοντελοποίησης.		✓			
12. Θα υποστηρίξω τα συμπεράσματα/πορίσματα/αποφάσεις αυτών των συναντήσεων μπροστά σε άλλα μέλη της οργάνωσής μου.					
13. Η διαδικασία μοντελοποίησης μου έδωσε περισσότερες πληροφορίες για τις διαδικασίες ανατροφοδότησης (μπούμερανγκ/λούπες) που παίζουν ρόλο στο πρόβλημα.	✓				
14. Η διαδικασία μοντελοποίησης μου έδωσε ελάχιστη εικόνα των απόψεων και των ιδεών των άλλων συμμετεχόντων για το πρόβλημα.					✓
15. Ορισμένα μόνο άτομα κυριάρχησαν στις συζητήσεις.				✓	
16. Η διαδικασία μοντελοποίησης δεν μου έδωσε αρκετές πληροφορίες για τις δυνατότητες που έχει η οργάνωσή μου για να βελτιώσει το πρόβλημα.				✓	

17. Θα προσπαθήσω να πείσω και άλλους στην οργάνωσή μου για τη σημασία αυτών των συμπερασμάτων.	✓				
18. Η χρήση μοντέλων για την προσέγγιση του προβλήματος είναι αποτελεσματική.		✓			
19. Συνολικά, πιστεύω ότι αυτές οι συνεδρίες ήταν επιτυχείς.	✓				

Εαν συγκρίνουμε τις συνεδρίες μοντελοποίησης οπου χρησιμοποιήσαμε μοντέλα, με τις κανονικές ομαδικές συναντήσεις/συνεδριάσεις/συζητήσεις/meetings στις οποίες είστε συνηθισμένοι, για παρόμοια προβλήματα όπως το πρόβλημα της ποιότητας που προσπαθήσαμε να καταλάβουμε μαζί, θα λέγατε οτι οι συνεδρίες μοντελοποίησης:

	sa 5	a 4	a/d 3	d 2	sd 1
1. Προσφέρουν περισσότερες γνώσεις σε σχέση με τις κανονικές συναντήσεις εργασίας;		✓			
2. Προσφέρουν ταχύτερα ενόραση σε σχέση με τις κανονικές συναντήσεις εργασίας;		✓			
3. Οδηγούν σε καλύτερη επικοινωνία μεταξύ των συμμετεχόντων;	✓				
4. Οδηγούν ταχύτερα σε μια κοινή οπτική μεταξύ των συμμετεχόντων;	✓				
5. Δημιουργούν μια καλύτερη κοινή οπτική μεταξύ των συμμετεχόντων;		✓			
6. Οδηγούν ταχύτερα σε μια κοινή δέσμευση των συμμετεχόντων;		✓			
7. Δημιουργούν περισσότερη δέσμευση των συμμετεχόντων;	✓				

Επιδράσεις των διαφορετικών στοιχείων/πτυχών της μεθόδου Ομαδικής Μοντελοποίησης

Οι συνεδρίες μοντελοποίησης συνδυάζουν διάφορα στοιχεία/πτυχές οι οποίες μπορεί να έχουν συμβάλει με διαφορετικούς τρόπους στο συνολικό αποτέλεσμα των συνεδριών. Στις ακόλουθες ερωτήσεις σας ζητείται να διευκρινίσετε κατά πόσο μια πτυχή συνέβαλε στο συνολικό αποτέλεσμα. Μπορείτε να το κάνετε αυτό βαθμολογώντας κάθε στοιχείο/πτυχή σε μια κλίμακα από -5 έως +5, στην οποία:

-5 = δεν είχε καμιά χρησιμότητα, εμπόδισε τις συνεδρίες.
0 = δεν εμπόδισε, αλλά δεν ήταν καθόλου χρήσιμη.
+5 = συνέβαλε πολύ.

	score -5 to +5
1. Το γεγονός ότι το μοντέλο προβάλλεται / καταγράφεται με τρόπο ορατό για όλους.	+5
2. Το γεγονός ότι ένα άτομο εξω απο την οργάνωση λειτούργησε ως «διευκολυντής ομάδας».	+5
3. Η ευκαιρία για ανοιχτή και εκτενή συζήτηση επι του προβλήματος.	+5
4. Η χρήση του μοντέλου.	+5
5. Γραπτές αναφορές (με ερωτήσεις) μεταξύ των συνεδριών.	+5
6. Συγκέντρωση των δεδομένων που απαιτούνται για το ποσοτικό μοντέλο.	+5
7. Ανάλυση των δεδομένων.	+5
8. Προσομοίωση, χρησιμοποιώντας το ποσοτικό μοντέλο.	
9. Άλλα, ...	

Ποιότητα των συνεδριών μοντελοποίησης

Οι ακόλουθες ερωτήσεις έχουν ως στόχο την αξιολόγηση της ποιότητας της διαδικασίας μοντελοποίησης. Με τη λέξη 'πρόβλημα' αναφερόμαστε και πάλι στον ορισμό του προβλήματος που χρησιμοποιήθηκε στη διαδικασία μοντελοποίησης: **τη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.**

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η παρούσα κατάσταση της οργάνωσής μου χαρτογραφήθηκε καλά.		✓			
2. Η περιγραφή της επιθυμητής κατάστασης που πρέπει να επιτευχθεί ήταν σωστή.	✓				
3. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκε ο σωστός ορισμός του προβλήματος.		✓			
4. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκαν όλες οι σχετικές πληροφορίες.		✓			
5. Η ανάλυση των πληροφοριών ήταν σωστή.		✓			
6. Όλα τα ζητήματα ή οι προβληματικοί τομείς που έχριζαν προσοχής, διερευνήθηκαν.		✓			
7. Στη διαδικασία μοντελοποίησης δεν συζητήθηκαν όλες οι χρήσιμες λύσεων.				✓	
8. Στη διαδικασία μοντελοποίησης επεξεργασθήκαμε τα πλεονεκτήματα και τα μειονεκτήματα των πιθανών λύσεων.		✓			
9. Η επιλογή της πιο ελπιδοφόρας λύσης(εων) βασίστηκε σε υγιή επιχειρήματα.		✓			
10. Στη διαδικασία μοντελοποίησης επιλέχθηκε η καλύτερη λύση(εις).		✓			

Προτάσεις για μελλοντικές συνεδρίες

Οι ακόλουθες ερωτήσεις μπορεί να είναι πολύ χρήσιμες για τον προγραμματισμό των μελλοντικών συνεδριών μοντελοποίησης.

Ποια ήταν τα τρία καλύτερα χαρακτηριστικά των συνεδριών;

a) Οπτικοποίηση μοντέλου

b) Συζήτηση διαφορετικών απόψεων και σταδιακή βελτίωση επικοινωνίας των εμπλεκόμενων

c) Ήπρη διαμεσολάβηση - καθοδήγηση

Ποια ήταν τα τρία πιο απογοητευτικά χαρακτηριστικά ή προβλήματα των συνεδριών;

a)

b)

c)

Ποιες συγκεκριμένες προτάσεις θα κάνατε αν οργανωθούν ή επαναληφθούν συνεδρίες όπως αυτές;

a)

b)

c)

Σας ευχαριστώ και πάλι θερμά για τη συνεργασία σας.

Μέρος ΙΙ: Πιστοποιητικό συγκατάθεσης

Δήλωση ενήμερης συγκατάθεσης από συμμετέχοντα

Ως εμπλεκόμενος/ενδιαφερόμενος σε δημόσιο νοσοκομείο, έχω προσκληθεί να συμμετάσχω στην έρευνα της κας Αγγελικής Λενάκακη, υποψήφιας διδάκτωρ του πανεπιστημίου του Παλέρμο, για τη διδακτορική της διατριβή με τίτλο "Η υπέρβαση των ορίων της παραδοσιακής μέτρησης απόδοσης στα δημόσια νοσοκομεία: Μια δυναμική προσέγγιση διαχείρισης της απόδοσης για τη βελτίωση της ποιότητας των νοσοκομειακών υπηρεσιών».

Η φύση και ο σκοπός της έρευνας που διεξάγεται στο Νοσοκομείο, στο πλαίσιο της διδακτορικής διατριβής της κας Λενακάκη, μου εξηγήθηκε και συμφωνώ οικειοθελώς να συμμετάσχω πλήρως στις συνεδρίες μοντελοποίησης και στις συνεντεύξεις που διεξάγει η ερευνήτρια κα Λενακάκη, καθώς επίσης και να συμπληρώσω τα ερωτηματολόγια και τα βιβλία εργασίας, τα οποία θα συμβάλλουν στην διδακτορική της έρευνα και θα αποτελέσουν μέρος της διδακτορικής διατριβής και των ενδεχόμενων δημοσιεύσεων της κ. Αγγελικής Λενάκακη.

Συμφωνώ να καταγραφούν και να ηχογραφηθούν οι συνεδρίες μοντελοποίησης και οι συνεντεύξεις για ερευνητικούς σκοπούς, και κατανοώ ότι αν και η φωνή μου θα ηχογραφηθεί, η ταυτότητά μου δεν θα αποκαλυφθεί σε καμία δημοσίευση, έγγραφο, καταγραφή ή οποιοδήποτε άλλο μέσο που σχετίζονται με αυτή την έρευνα. Μόνο η ερευνήτρια κ. Λενάκακη θα έχει πρόσβαση στο ηχογραφημένο υλικό.

Έχω διαβάσει και κατανοήσει τις παραπάνω πληροφορίες του ενημερωτικού δελτίου. Είχα την ευκαιρία να θέσω ερωτήσεις σχετικά με αυτό και όλες οι ερωτήσεις που έθεσα έχουν απαντηθεί ικανοποιητικά. Συμφωνώ πλήρως και οικειοθελώς να συμμετάσχω σε αυτό το ερευνητικό πρόγραμμα, συμφωνώ ως προς την χρησιμοποίηση και επεξεργασία των προσωπικών μου δεδομένων για ερευνητικούς σκοπούς και συμφωνώ να σεβασθώ την εμπιστευτικότητα των ταυτοτήτων των άλλων συμμετεχόντων και των πληροφοριών που μου αποκαλύπτονται κατά τη διάρκεια των συνεδριών ομαδικής μοντελοποίησης.

Όνομα / Επώνυμο Συμμετέχοντα Καταδημάκη Παναγιώτα

Υπογραφή Συμμετέχοντα

Ημερομηνία 26/2/20
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Δήλωση του ερευνητή / ατόμου που λαμβάνει τη συγκατάθεση

Έχω διαβάσει με ακρίβεια το ενημερωτικό δελτίο στον δυνητικό συμμετέχοντα και κατά το μέγιστο των δυνατοτήτων μου επιβεβαίωσα ότι ο συμμετέχων κατανοεί ότι θα γίνουν τα εξής:
1. Τρεις Ομαδικές Συνεδρίες Μοντελοποίησης, διάρκειας πέντε ωρών η καθεμία.
2. Μία ή δύο Συνεντεύξεις, διάρκειας περίπου μίας ώρας η καθεμία.
3. Συμπλήρωση ορισμένων ερωτηματολογίων και βιβλίων εργασίας.

Επιβεβαιώνω ότι δόθηκε στον συμμετέχοντα η ευκαιρία να υποβάλει ερωτήσεις σχετικά με την έρευνα και ότι όλες οι ερωτήσεις που τέθηκαν από τον συμμετέχοντα έχουν απαντηθεί σωστά και με τον καλύτερο δυνατό τρόπο. Επιβεβαιώνω ότι ο συμμετέχων δεν εξαναγκάσθηκε με κανένα τρόπο ούτε πιέσθηκε να δώσει τη συγκατάθεσή του, αλλα αντίθετα η συγκατάθεση δόθηκε ελεύθερα και οικειοθελώς.

Ένα αντίγραφο αυτού του πιστοποιητικού συγκατάθεσης έχει παρασχεθεί στον συμμετέχοντα.

Όνομα ερευνητή / προσώπου που λαμβάνει τη συγκατάθεση _____
Υπογραφή ερευνητή / που λαμβάνει τη συγκατάθεση _____
Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ ΚΟΙΝΟΥ ΠΛΑΙΣΙΟΥ ΑΞΙΟΛΟΓΗΣΗΣ
για ΣΥΜΠΛΗΡΩΣΗ ΑΠΟ ΚΟΙΝΩΝΙΚΟΥΣ ΦΟΡΕΙΣ

Υποκριτήριο 8.1 Σκεφτείτε τι επιτυγχάνει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **Μετρήσεων Αντίληψης**

Οι μετρήσεις αντίληψης επικεντρώνονται στην αντίληψη της κοινότητας, για τις επιδόσεις της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από εμπλεκόμενους εκτός Νοσοκομείου. Η μέτρηση της αντίληψης συνιστά ένδειξη της αποτελεσματικότητας των κοινωνικών και περιβαλλοντικών στρατηγικών. Περιλαμβάνει την οπτική γωνία για τη διαφάνεια, τον αντίκτυπο για την ποιότητα ζωής και την ποιότητα της δημοκρατίας, την οπτική για τη δεοντολογία ως προς την υποστήριξη των πολιτών/ασθενών, την προσέγγιση και τα αποτελέσματα για τα κοινωνικά και περιβαλλοντικά θέματα.

Α/Α	Ερώτηση	Απάντηση					
		Καθόλου			(0)		
		Πολύ Λίγο			(1)		
		Λίγο			(2)		
		Πολύ			(3)		
		Πάρα Πολύ			(4)		
		Απόλυτα			(5)		
1	Σε ποιο βαθμό θεωρείτε ότι το κοινό ενημερώνεται για συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)στη βελτίωση της ποιότητας ζωής των πολιτών της περιοχής εντός της οποίας δραστηριοποιείται; (π.χ. πρόγραμμα προαγωγής υγείας, δράσεις για ευπαθείς ομάδες, κ.λπ.)	0	1	2	3	4	5
2	Σε ποιο βαθμό κρίνετε τη δημόσια εικόνα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) ως θετική;	0	1	2	3	4	5
3	Σε ποιο βαθμό κρίνετε ικανοποιητικά τα αποτελέσματα των επαφών και της συνεργασίας της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με τους τοπικούς κοινωνικούς φορείς;	0	1	2	3	4	5
4	Σε ποιο βαθμό θεωρείτε ικανοποιητικές τις αλλαγές που επέρχονται στη λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), ως αποτέλεσμα της προσπάθειας ανταπόκρισης στις μεταβολές του κοινωνικού περιβάλλοντος;	0	1	2	3	4	5
5	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), την οικονομία της περιοχής εντός της οποίας δραστηριοποιείται; (*π.χ. δημιουργία/προσέλκυση μικρών επιχειρηματικών δραστηριοτήτων που έχουν χωροταξική εγγύτητα, δημιουργία δημόσιων δρόμων ή μέσων μαζικής μεταφοράς που εξυπηρετούν και τους υφιστάμενους οικονομικά δρώντες*).	0	1	2	3	4	5
6	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)την κοινωνία της περιοχής εντός της οποίας δραστηριοποιείται, λαμβάνοντας υπόψη την ποιότητα της δημοκρατικής συμμετοχής των πολιτών;	0	1	2	3	4	5
7	Σε ποιο βαθμό θεωρείτε ικανοποιητική την υποστήριξη των Α.Μ.Ε.Α. από το τη Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ);	0	1	2	3	4	5
8	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη λειτουργία της	0	1	2	3	4	5

	Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την προστασία του περιβάλλοντος; (*προσπάθειες εξοικονόμησης ενέργειας, χρήση εναλλακτικών πηγών ενέργειας, διαχείριση αποβλήτων, συμμόρφωση σε περιβαλλοντικές προδιαγραφές, κ.τ.λ.*)						
9	Σε ποιο βαθμό θεωρείτε ότι η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)είναι ανοικτή σε τρίτους και διαφανής; (*π.χ. τήρηση αρχών/αξιών όπως ισότητα, συνέχεια, κ.λπ.*)	0	1	2	3	4	5
10	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη δημοσιογραφική κάλυψη των δραστηριοτήτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.;	0	1	2	3	4	5

Υποκριτήριο 8.2 Σκεφτείτε τι επιτυγχάνει την Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **μετρήσεων απόδοσης σχετικά με την κοινωνία**

Οι μετρήσεις απόδοσης εστιάζουν στα μέτρα που χρησιμοποιούνται από το Νοσοκομείο για να ελέγξει, να κατανοήσει, να προβλέψει και να βελτιώσει τις επιδόσεις σχετικά με την κοινωνική του ευθύνη. Θα πρέπει να δοθεί μια σαφής ένδειξη της αποτελεσματικότητας των προσεγγίσεων του Νοσοκομείου, για τα κοινωνικά θέματα. Οι μετρήσεις απόδοσης μπορούν να εξετάζουν τη δεοντολογία, τις πρωτοβουλίες και τα αποτελέσματα της πρόληψης των κινδύνων για την υγεία, τις πρωτοβουλίες για την ανταλλαγή γνώσεων, τις πρωτοβουλίες για τη διατήρηση των πόρων και τη μείωση των περιβαλλοντικών επιπτώσεων κ.λπ.

Α/Α	Ερώτηση	Απάντηση	
		Καθόλου	(0)
		Πολύ Λίγο	(1)
		Λίγο	(2)
		Πολύ	(3)
		Πάρα Πολύ	(4)
		Απόλυτα	(5)

1	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι σχέσεις με άλλα (αντίστοιχα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)) Τμήματα και κοινωνικούς φορείς, αρμόδιες αρχές, κ.λπ;	0	1	2	3	4	5
2	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι προσπάθειες που καταβάλλει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την αντιμετώπιση των προβλημάτων ευπαθών ομάδων πληθυσμού; (*συμβολή Γραφείου Προστασίας Δικαιωμάτων Ληπτών Υπηρεσιών Υγείας στις ευπαθείς ομάδες, κοινωνική υπηρεσία, κ.λπ.*)	0	1	2	3	4	5
3	Σε ποιο βαθμό κρίνετε ικανοποιητική την κάλυψη των θεμάτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.; (έχει αναφερθεί η ίδια ερώτηση πιο πάνω πεδίο 10)	0	1	2	3	4	5
4	Σε ποιο βαθμό κρίνετε ικανοποιητική την συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) στον σχεδιασμό, στη χρηματοδότηση και στην υλοποίηση διεθνών προγραμμάτων και στη συμμετοχή των εργαζομένων σε φιλανθρωπικές δραστηριότητες	0	1	2	3	4	5
5	Σε ποιο βαθμό ενθαρρύνει την Μονάδα	0	1	2	3	4	5

	(Εμφραγμάτων/ΜΝ/ΜΕΘ), τους υπαλλήλους του, αλλά και τους πολίτες/ασθενείς, που έρχονται σε επαφή με αυτό να ασχολούνται με κοινωνικά ζητήματα και να δραστηριοποιούνται στο χώρο της κοινωνίας των πολιτών/ασθενών;						
6	Σε ποιο βαθμό θεωρείτε παραγωγική την ανταλλαγή γνώσης και εμπειριών της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με κοινωνικούς φορείς;	0	1	2	3	4	5
7	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ) αναλαμβάνει πρωτοβουλίες πρόληψης κινδύνων υγείας και ατυχημάτων, για τους υπαλλήλους , αλλά και για τους πολίτες/ασθενείς με τους οποίους συναλλάσσεται; (λήψη προληπτικών μέτρων έναντι κινδύνων, καταπολέμηση καπνίσματος, συνεργασία με «φίλιες» δυνάμεις στην αντιμετώπιση Εκτάκτων Αναγκών, παρεμβάσεις Επιτροπής Νοσοκομειακών Λοιμώξεων, κ.λπ.)	0	1	2	3	4	5
8	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ)έχει εκπονήσει/σχεδιάσει δράσεις για τη διαχείριση των πόρων και για την προστασία του περιβάλλοντος (ανακύκλωση, περιβαλλοντικά πρότυπα, ενέργεια κτλ);	0	1	2	3	4	5

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΠΡΙΝ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα Γραμματικάτα Καταδικάκη

Υπογραφή Συμμετέχοντα Καταδικάκη

Ημερομηνία 26/2/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε ποιο θεωρείτε εσείς ως το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

- Burn out
- Εκπαίδευση
- κυκλικό ωράριο
- Επικοινωνία (όλων των εμπλεκόμενων)
- Έλλειψη προσωπικού
- Φόρτος εργασίας
- κλειστά τμήματα
- αυξημένα περιστατικά και λίγο προσωπικό
- Συγκρούσεις με εξωτερικούς παράγοντες
- Έλλειψη υλικών

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

Απάντηση στην ερώτηση 1.

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

Ποιότητα των φαινάδων

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

- Σεμινάρια - Εκπαίδευση
- Αλλαγή προσωπικού των κλειστών τμημάτων ανα 5χρόνια
- Προσλήψεις προσωπικού
- Εκπαίδευση όλου του προσωπικού Ιατρών Νοσηλευτών ώστε να είναι σε θέση να αντιμετωπίσουν τυχόν περιστατικά εκτός βαινάδων

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΜΕΤΑ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα Χατζηδάκη Παναγιώτη

Υπογραφή Συμμετέχοντα Λ. Χατζηδάκη

Ημερομηνία 28/2/20
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Τα προβλήματα είναι σοβαρά και αντιμετωπίζονται.

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

Οι αιτίες μπορεί να είναι εσωτερικές (οι οποίες ίσως μπορούν εν μέρει να ελεγχθούν), εξωτερικές που εκφεύγουν του ελέγχου μας και οι λύσεις δεν είναι εύκολα εφικτές.

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

- Επηρεάζει την εξυπηρέτηση των πολιτών

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

- Προσλήψεις προσωπικού
- Διαχείριση των πόρων καλύτερα
- Ικανοποίηση του προσωπικού (για καλύτερη παραγωγή εργασίας - αξιοθ-γίας κ.α.).

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερωτηματολόγιο CICC

Αγαπητέ/ή συμμετέχων/ουσα στη συνεδρία ομαδικής μοντελοποίησης,

Αυτό το ερωτηματολόγιο αξιολογεί τη χρήση της μεθόδου ομαδικής μοντελοποίησης (GMB) στη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.

Αυτό το ερωτηματολόγιο εξετάζει τον επείγοντα χαρακτήρα του προβλήματος που διακυβεύεται, τα αποτελέσματα των συνεδριών μοντελοποίησης, τις επιπτώσεις των διαφόρων πτυχών της κάθε συνεδρίας, την ποιότητα της διαδικασίας μοντελοποίησης και τις προτάσεις για μελλοντικές συνεδρίες. Σας προσκαλούμε ευγενικά να απαντήσετε στις ερωτήσεις αυτές όσο καλύτερα μπορείτε. Τα αποτελέσματα αυτού του ερωτηματολογίου θα χρησιμοποιηθούν για τη βελτίωση της μεθόδου ομαδικής μοντελοποίησης που χρησιμοποιήθηκε (Group Model Building – GMB). Προτού ξεκινήσετε να αξιολογείτε τις συνεδρίες, θα θέλαμε να σας ζητήσουμε ορισμένες βασικές πληροφορίες.

Όλες οι πληροφορίες είναι εμπιστευτικές.

Η ημερομηνία γέννησής μου είναι ...12/5/71...
Είμαι μέλος αυτής της οργάνωσης (Νοσοκομείο) από .....2002.....
Η θέση/δουλειά μου σε αυτόν τον οργανισμό (Νοσοκομείο) είναι .....ΤΕ Νοσηλευτικής ΜΕΘ

Σας ευχαριστώ θερμά για την συνεργασία.

Αποτελέσματα της διαδικασίας μοντελοποίησης

Τα ακόλουθα ερωτήματα αποσκοπούν κυρίως στις ομαδικές συζητήσεις που διεξήχθησαν κατά την διάρκεια των συνεδριών μοντελοποίησης. Αυτά τα ερωτήματα αναφέρονται επίσης στα αποτελέσματα της ανάλυσης δεδομένων και των προσομοιώσεων. Οι απαντήσεις για τις ακόλουθες ερωτήσεις εμπίπτουν σε μία από τις πέντε κατηγορίες:

συμφωνώ απόλυτα (5)
συμφωνώ (4)
δε συμφωνώ ούτε διαφωνώ (3)
διαφωνώ (2)
διαφωνώ έντονα (1)

(Προσοχή: αντεστραμμένη κλίμακα Λικερτ, δηλαδή 5→1 αντί 1→5)

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η οπτική μου για το πρόβλημα έχει αυξηθεί λόγω της διαδικασίας μοντελοποίησης.	X				
2. Πιστεύω ότι, εξαιτίας αυτών των συνεδριών, έχουμε φτάσει σε μια κοινή οπτική για το πρόβλημα.	X				
3. Συμφωνώ με τα αποτελέσματα / συμπεράσματα που προέκυψαν κατά τη διαδικασία μοντελοποίησης, σε γενικές γραμμές.		X			
4. Η διαδικασία μοντελοποίησης μου έδωσε μια καλύτερη εικόνα για τη σύνδεση μεταξύ των στοιχείων που συνθέτουν το πρόβλημα.	X				
5. Το μοντέλο που αναπτύχθηκε ήταν αποτέλεσμα της ενσωμάτωσης διαφορετικών απόψεων και ιδεών των συμμετεχόντων.	X				
6. Εάν εγώ και άλλοι στην οργάνωση χρησιμοποιούσαμε την ίδια προσέγγιση στο σχεδιασμό και στην αντιμετώπιση των προβλημάτων μας, όλοι θα ακολουθούσαν πιστά αυτό το σχέδιο στα φυσικά συμπεράσματά του.		X			
7. Ως αποτέλεσμα της διαδικασίας μοντελοποίησης **δεν** είναι ακόμα σαφές για μένα ποιες είναι οι βαθιές αιτίες του προβλήματος.				X	
8. Η διαδικασία μοντελοποίησης με βοήθησε στην κατανόηση των απόψεων των άλλων συμμετεχόντων.		X			
9. Δεν επιτεύχθηκε καμία συμφωνία επι των πραγμάτων.				X	
10. Η χρήση του μοντέλου βοήθησε στην επικοινωνία μεταξύ των συμμετεχόντων σχετικά με το πρόβλημα.	X				
11. Οι απόψεις μας είναι πιο κοντά λόγω της διαδικασίας μοντελοποίησης.	X				
12. Θα υποστηρίξω τα συμπεράσματα/πορίσματα/αποφάσεις αυτών των συναντήσεων μπροστά σε άλλα μέλη της οργάνωσής μου.	X				
13. Η διαδικασία μοντελοποίησης μου έδωσε περισσότερες πληροφορίες για τις διαδικασίες ανατροφοδότησης (μπούμερανγκ/λούπες) που παίζουν ρόλο στο πρόβλημα.	X				
14. Η διαδικασία μοντελοποίησης μου έδωσε ελάχιστη εικόνα των απόψεων και των ιδεών των άλλων συμμετεχόντων για το πρόβλημα.				X	
15. Ορισμένα μόνο άτομα κυριάρχησαν στις συζητήσεις.					X
16. Η διαδικασία μοντελοποίησης δεν μου έδωσε αρκετές πληροφορίες για τις δυνατότητες που έχει η οργάνωσή μου για να βελτιώσει το πρόβλημα.			X		

17. Θα προσπαθήσω να πείσω και άλλους στην οργάνωσή μου για τη σημασία αυτών των συμπερασμάτων.				X	
18. Η χρήση μοντέλων για την προσέγγιση του προβλήματος είναι αποτελεσματική.		X			
19. Συνολικά, πιστεύω ότι αυτές οι συνεδρίες ήταν επιτυχείς.		X			

Εαν συγκρίνουμε τις συνεδρίες μοντελοποίησης οπου χρησιμοποιήσαμε μοντέλα, με τις κανονικές ομαδικές συναντήσεις/συνεδριάσεις/συζητήσεις/meetings στις οποίες είστε συνηθισμένοι, για παρόμοια προβλήματα όπως το πρόβλημα της ποιότητας που προσπαθήσαμε να καταλάβουμε μαζί, θα λέγατε οτι οι συνεδρίες μοντελοποίησης:

	sa 5	a 4	a/d 3	d 2	sd 1
1. Προσφέρουν περισσότερες γνώσεις σε σχέση με τις κανονικές συναντήσεις εργασίας;		X			
2. Προσφέρουν ταχύτερα ενόραση σε σχέση με τις κανονικές συναντήσεις εργασίας;		X			
3. Οδηγούν σε καλύτερη επικοινωνία μεταξύ των συμμετεχόντων;	X				
4. Οδηγούν ταχύτερα σε μια κοινή οπτική μεταξύ των συμμετεχόντων;	X				
5. Δημιουργούν μια καλύτερη κοινή οπτική μεταξύ των συμμετεχόντων;	X				
6. Οδηγούν ταχύτερα σε μια κοινή δέσμευση των συμμετεχόντων;	X				
7. Δημιουργούν περισσότερη δέσμευση των συμμετεχόντων;				X	

Επιδράσεις των διαφορετικών στοιχείων/πτυχών της μεθόδου Ομαδικής Μοντελοποίησης

Οι συνεδρίες μοντελοποίησης συνδυάζουν διάφορα στοιχεία/πτυχές οι οποίες μπορεί να έχουν συμβάλει με διαφορετικούς τρόπους στο συνολικό αποτέλεσμα των συνεδριών. Στις ακόλουθες ερωτήσεις σας ζητείται να διευκρινίσετε κατά πόσο μια πτυχή συνέβαλε στο συνολικό αποτέλεσμα. Μπορείτε να το κάνετε αυτό βαθμολογώντας κάθε στοιχείο/πτυχή σε μια κλίμακα από -5 έως +5, στην οποία:

-5 = δεν είχε καμιά χρησιμότητα, εμπόδισε τις συνεδρίες.
0 = δεν εμπόδισε, αλλά δεν ήταν καθόλου χρήσιμη.
+5 = συνέβαλε πολύ.

	score -5 to +5
1. Το γεγονός ότι το μοντέλο προβάλλεται / καταγράφεται με τρόπο ορατό για όλους.	3
2. Το γεγονός ότι ένα άτομο εξω απο την οργάνωση λειτούργησε ως «διευκολυντής ομάδας».	4
3. Η ευκαιρία για ανοιχτή και εκτενή συζήτηση επι του προβλήματος.	4
4. Η χρήση του μοντέλου.	4
5. Γραπτές αναφορές (με ερωτήσεις) μεταξύ των συνεδριών.	4
6. Συγκέντρωση των δεδομένων που απαιτούνται για το ποσοτικό μοντέλο.	4
7. Ανάλυση των δεδομένων.	3
8. Προσομοίωση, χρησιμοποιώντας το ποσοτικό μοντέλο.	4
9. Άλλα, ...	

Ποιότητα των συνεδριών μοντελοποίησης

Οι ακόλουθες ερωτήσεις έχουν ως στόχο την αξιολόγηση της ποιότητας της διαδικασίας μοντελοποίησης. Με τη λέξη 'πρόβλημα' αναφερόμαστε και πάλι στον ορισμό του προβλήματος που χρησιμοποιήθηκε στη διαδικασία μοντελοποίησης: **τη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.**

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η παρούσα κατάσταση της οργάνωσής μου χαρτογραφήθηκε καλά.		X			
2. Η περιγραφή της επιθυμητής κατάστασης που πρέπει να επιτευχθεί ήταν σωστή.		X			
3. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκε ο σωστός ορισμός του προβλήματος.	X				
4. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκαν όλες οι σχετικές πληροφορίες.		X			
5. Η ανάλυση των πληροφοριών ήταν σωστή.		X			
6. Όλα τα ζητήματα ή οι προβληματικοί τομείς που έχριζαν προσοχής, διερευνήθηκαν.	X				
7. Στη διαδικασία μοντελοποίησης δεν συζητήθηκαν όλες οι χρήσιμες λύσεων.		X			
8. Στη διαδικασία μοντελοποίησης επεξεργασθήκαμε τα πλεονεκτήματα και τα μειονεκτήματα των πιθανών λύσεων.		X			
9. Η επιλογή της πιο ελπιδοφόρας λύσης(εων) βασίστηκε σε υγιή επιχειρήματα.		X			
10. Στη διαδικασία μοντελοποίησης επιλέχθηκε η καλύτερη λύση(εις).		X			

Προτάσεις για μελλοντικές συνεδρίες

Οι ακόλουθες ερωτήσεις μπορεί να είναι πολύ χρήσιμες για τον προγραμματισμό των μελλοντικών συνεδριών μοντελοποίησης.

Ποια ήταν τα τρία καλύτερα χαρακτηριστικά των συνεδριών;

a) Συμφωνία όλων

b) Καλή συνεργασία

c) Χρόνος ανάλυσης

Ποια ήταν τα τρία πιο απογοητευτικά χαρακτηριστικά ή προβλήματα των συνεδριών;

a) Μεγάλος αριθμός συμμετοχών

b) Έλλειψη χρόνου

c) Συνεχείς διακοπές (επιπλέον τηλέφωνα)

Ποιες συγκεκριμένες προτάσεις θα κάνατε αν οργανωθούν ή επαναληφθούν συνεδρίες όπως αυτές;

a) Περισσότερος αριθμός

b) Χρόνος (για να μην υπάρχει πίεση)

c) ΟΧΙ ΔΙΑΚΟΠΕΣ

Σας ευχαριστώ και πάλι θερμά για τη συνεργασία σας.

Μέρος ΙΙ: Πιστοποιητικό συγκατάθεσης

Δήλωση ενήμερης συγκατάθεσης από συμμετέχοντα

Ως εμπλεκόμενος/ενδιαφερόμενος σε δημόσιο νοσοκομείο, έχω προσκληθεί να συμμετάσχω στην έρευνα της κας Αγγελικής Λενάκακη, υποψήφιας διδάκτωρ του πανεπιστημίου του Παλέρμο, για τη διδακτορική της διατριβή με τίτλο "Η υπέρβαση των ορίων της παραδοσιακής μέτρησης απόδοσης στα δημόσια νοσοκομεία: Μια δυναμική προσέγγιση διαχείρισης της απόδοσης για τη βελτίωση της ποιότητας των νοσοκομειακών υπηρεσιών».

Η φύση και ο σκοπός της έρευνας που διεξάγεται στο Νοσοκομείο, στο πλαίσιο της διδακτορικής διατριβής της κας Λενακάκη, μου εξηγήθηκε και συμφωνώ οικειοθελώς να συμμετάσχω πλήρως στις συνεδρίες μοντελοποίησης και στις συνεντεύξεις που διεξάγει η ερευνήτρια κα Λενακάκη, καθώς επίσης και να συμπληρώσω τα ερωτηματολόγια και τα βιβλία εργασίας, τα οποία θα συμβάλλουν στην διδακτορική της έρευνα και θα αποτελέσουν μέρος της διδακτορικής διατριβής και των ενδεχόμενων δημοσιεύσεων της κ. Αγγελικής Λενάκακη.

Συμφωνώ να καταγραφούν και να ηχογραφηθούν οι συνεδρίες μοντελοποίησης και οι συνεντεύξεις για ερευνητικούς σκοπούς, και κατανοώ ότι αν και η φωνή μου θα ηχογραφηθεί, η ταυτότητά μου δεν θα αποκαλυφθεί σε καμία δημοσίευση, έγγραφο, καταγραφή ή οποιοδήποτε άλλο μέσο που σχετίζονται με αυτή την έρευνα. Μόνο η ερευνήτρια κ. Λενάκακη θα έχει πρόσβαση στο ηχογραφημένο υλικό.

Έχω διαβάσει και κατανοήσει τις παραπάνω πληροφορίες του ενημερωτικού δελτίου. Είχα την ευκαιρία να θέσω ερωτήσεις σχετικά με αυτό και όλες οι ερωτήσεις που έθεσα έχουν απαντηθεί ικανοποιητικά. Συμφωνώ πλήρως και οικειοθελώς να συμμετάσχω σε αυτό το ερευνητικό πρόγραμμα, συμφωνώ ως προς την χρησιμοποίηση και επεξεργασία των προσωπικών μου δεδομένων για ερευνητικούς σκοπούς και συμφωνώ να σεβασθώ την εμπιστευτικότητα των ταυτοτήτων των άλλων συμμετεχόντων και των πληροφοριών που μου αποκαλύπτονται κατά τη διάρκεια των συνεδριών ομαδικής μοντελοποίησης.

Όνομα / Επώνυμο Συμμετέχοντα Μαρία Καρύη

Υπογραφή Συμμετέχοντα _____

Ημερομηνία 24/02/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Δήλωση του ερευνητή / ατόμου που λαμβάνει τη συγκατάθεση

Έχω διαβάσει με ακρίβεια το ενημερωτικό δελτίο στον δυνητικό συμμετέχοντα και κατά το μέγιστο των δυνατοτήτων μου επιβεβαίωσα ότι ο συμμετέχων κατανοεί ότι θα γίνουν τα εξής:
1. Τρεις Ομαδικές Συνεδρίες Μοντελοποίησης, διάρκειας πέντε ωρών η καθεμία.
2. Μία ή δύο Συνεντεύξεις, διάρκειας περίπου μίας ώρας η καθεμία.
3. Συμπλήρωση ορισμένων ερωτηματολογίων και βιβλίων εργασίας.
Επιβεβαιώνω ότι δόθηκε στον συμμετέχοντα η ευκαιρία να υποβάλει ερωτήσεις σχετικά με την έρευνα και ότι όλες οι ερωτήσεις που τέθηκαν από τον συμμετέχοντα έχουν απαντηθεί σωστά και με τον καλύτερο δυνατό τρόπο. Επιβεβαιώνω ότι ο συμμετέχων δεν εξαναγκάσθηκε με κανένα τρόπο ούτε πιέσθηκε να δώσει τη συγκατάθεσή του, αλλα αντίθετα η συγκατάθεση δόθηκε ελεύθερα και οικειοθελώς.

Ένα αντίγραφο αυτού του πιστοποιητικού συγκατάθεσης έχει παρασχεθεί στον συμμετέχοντα.

Όνομα ερευνητή / προσώπου που λαμβάνει τη συγκατάθεση _____
Υπογραφή ερευνητή / που λαμβάνει τη συγκατάθεση _____
Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ ΚΟΙΝΟΥ ΠΛΑΙΣΙΟΥ ΑΞΙΟΛΟΓΗΣΗΣ
για ΣΥΜΠΛΗΡΩΣΗ ΑΠΟ ΚΟΙΝΩΝΙΚΟΥΣ ΦΟΡΕΙΣ

Υποκριτήριο 8.1 Σκεφτείτε τι επιτυγχάνει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **Μετρήσεων Αντίληψης**

Οι μετρήσεις αντίληψης επικεντρώνονται στην αντίληψη της κοινότητας, για τις επιδόσεις της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από εμπλεκόμενους εκτός Νοσοκομείου. Η μέτρηση της αντίληψης συνιστά ένδειξη της αποτελεσματικότητας των κοινωνικών και περιβαλλοντικών στρατηγικών. Περιλαμβάνει την οπτική γωνία για τη διαφάνεια, τον αντίκτυπο για την ποιότητα ζωής και την ποιότητα της δημοκρατίας, την οπτική για τη δεοντολογία ως προς την υποστήριξη των πολιτών/ασθενών, την προσέγγιση και τα αποτελέσματα για τα κοινωνικά και περιβαλλοντικά θέματα.

Α/Α	Ερώτηση	Απάντηση					
		Καθόλου	Πολύ Λίγο	Λίγο	Πολύ	Πάρα Πολύ	Απόλυτα
		(0)	(1)	(2)	(3)	(4)	(5)
1	Σε ποιο βαθμό θεωρείτε ότι το κοινό ενημερώνεται για συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)στη βελτίωση της ποιότητας ζωής των πολιτών της περιοχής εντός της οποίας δραστηριοποιείται; (π.χ. πρόγραμμα προαγωγής υγείας, δράσεις για ευπαθείς ομάδες, κ.λπ.)	0	1	2	3	4	5
2	Σε ποιο βαθμό κρίνετε τη δημόσια εικόνα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) ως θετική;	0	1	2	3	4	5
3	Σε ποιο βαθμό κρίνετε ικανοποιητικά τα αποτελέσματα των επαφών και της συνεργασίας της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με τους τοπικούς κοινωνικούς φορείς;	0	1	2	3	4	5
4	Σε ποιο βαθμό θεωρείτε ικανοποιητικές τις αλλαγές που επέρχονται στη λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), ως αποτέλεσμα της προσπάθειας ανταπόκρισης στις μεταβολές του κοινωνικού περιβάλλοντος;	0	1	2	3	4	5
5	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), την οικονομία της περιοχής εντός της οποίας δραστηριοποιείται; (*π.χ. δημιουργία/προσέλκυση μικρών επιχειρηματικών δραστηριοτήτων που έχουν χωροταξική εγγύτητα, δημιουργία δημόσιων δρόμων ή μέσων μαζικής μεταφοράς που εξυπηρετούν και τους υφιστάμενους οικονομικά δρώντες*).	0	1	2	3	4	5
6	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)την κοινωνία της περιοχής εντός της οποίας δραστηριοποιείται, λαμβάνοντας υπόψη την ποιότητα της δημοκρατικής συμμετοχής των πολιτών;	0	1	2	3	4	5
7	Σε ποιο βαθμό θεωρείτε ικανοποιητική την υποστήριξη των Α.Μ.Ε.Α. από το τη Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ);	0	1	2	3	4	5
8	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη λειτουργία της	0	1	2	3	4	5

	Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την προστασία του περιβάλλοντος; (*προσπάθειες εξοικονόμησης ενέργειας, χρήση εναλλακτικών πηγών ενέργειας, διαχείριση αποβλήτων, συμμόρφωση σε περιβαλλοντικές προδιαγραφές, κ.τ.λ.*)						
9	Σε ποιο βαθμό θεωρείτε ότι η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)είναι ανοικτή σε τρίτους και διαφανής; (*π.χ. τήρηση αρχών/αξιών όπως ισότητα, συνέχεια, κ.λπ.*)	0	1	2	3	4	5
10	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη δημοσιογραφική κάλυψη των δραστηριοτήτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.;	0	1	2	3	4	5

Υποκριτήριο 8.2 Σκεφτείτε τι επιτυγχάνει την Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **μετρήσεων απόδοσης σχετικά με την κοινωνία**

Οι μετρήσεις απόδοσης εστιάζουν στα μέτρα που χρησιμοποιούνται από το Νοσοκομείο για να ελέγξει, να κατανοήσει, να προβλέψει και να βελτιώσει τις επιδόσεις σχετικά με την κοινωνική του ευθύνη. Θα πρέπει να δοθεί μια σαφής ένδειξη της αποτελεσματικότητας των προσεγγίσεων του Νοσοκομείου, για τα κοινωνικά θέματα. Οι μετρήσεις απόδοσης μπορούν να εξετάζουν τη δεοντολογία, τις πρωτοβουλίες και τα αποτελέσματα της πρόληψης των κινδύνων για την υγεία, τις πρωτοβουλίες για την ανταλλαγή γνώσεων, τις πρωτοβουλίες για τη διατήρηση των πόρων και τη μείωση των περιβαλλοντικών επιπτώσεων κ.λπ.

Α/Α	Ερώτηση	Απάντηση	
		Καθόλου	(0)
		Πολύ Λίγο	(1)
		Λίγο	(2)
		Πολύ	(3)
		Πάρα Πολύ	(4)
		Απόλυτα	(5)

1	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι σχέσεις με άλλα (αντίστοιχα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)) Τμήματα και κοινωνικούς φορείς, αρμόδιες αρχές, κ.λπ;	0	1	2	3	4	5
2	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι προσπάθειες που καταβάλλει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την αντιμετώπιση των προβλημάτων ευπαθών ομάδων πληθυσμού; (*συμβολή Γραφείου Προστασίας Δικαιωμάτων Ληπτών Υπηρεσιών Υγείας στις ευπαθείς ομάδες, κοινωνική υπηρεσία, κ.λπ.*)	0	1	2	3	4	5
3	Σε ποιο βαθμό κρίνετε ικανοποιητική την κάλυψη των θεμάτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.; (έχει αναφερθεί η ίδια ερώτηση πιο πάνω πεδίο 10)	0	1	2	3	4	5
4	Σε ποιο βαθμό κρίνετε ικανοποιητική την συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) στον σχεδιασμό, στη χρηματοδότηση και στην υλοποίηση διεθνών προγραμμάτων και στη συμμετοχή των εργαζομένων σε φιλανθρωπικές δραστηριότητες	0	1	2	3	4	5
5	Σε ποιο βαθμό ενθαρρύνει την Μονάδα	0	1	2	3	4	5

	(Εμφραγμάτων/ΜΝ/ΜΕΘ), τους υπαλλήλους του, αλλά και τους πολίτες/ασθενείς, που έρχονται σε επαφή με αυτό να ασχολούνται με κοινωνικά ζητήματα και να δραστηριοποιούνται στο χώρο της κοινωνίας των πολιτών/ασθενών;						
6	Σε ποιο βαθμό θεωρείτε παραγωγική την ανταλλαγή γνώσης και εμπειριών της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με κοινωνικούς φορείς;	0	1	2	3	4	5
7	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ) αναλαμβάνει πρωτοβουλίες πρόληψης κινδύνων υγείας και ατυχημάτων, για τους υπαλλήλους , αλλά και για τους πολίτες/ασθενείς με τους οποίους συναλλάσσεται; (λήψη προληπτικών μέτρων έναντι κινδύνων, καταπολέμηση καπνίσματος, συνεργασία με «φίλιες» δυνάμεις στην αντιμετώπιση Εκτάκτων Αναγκών, παρεμβάσεις Επιτροπής Νοσοκομειακών Λοιμώξεων, κ.λπ.)	0	1	2	3	4	5
8	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ)έχει εκπονήσει/σχεδιάσει δράσεις για τη διαχείριση των πόρων και για την προστασία του περιβάλλοντος (ανακύκλωση, περιβαλλοντικά πρότυπα, ενέργεια κτλ);	0	1	2	3	4	5

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΠΡΙΝ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα Καρση Μαρία

Υπογραφή Συμμετέχοντα

Ημερομηνία 26/02/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε ποιο θεωρείτε εσείς ως το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

- Αντμίες αριθμός αιτεών
- Οι νοσηλευτικοί αιτεί έχει αυξημένες ανάγκες και ίσως δε ικανοποιούνται πλήρως λόγω έλλειψης προσωπικού

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

- Η οικονομική κρίση είχε ως αποτέλεσμα την αύξηση προσέλευσης αιτεών στα δημόσια νοσοκομεία
- Δε γινονται προσλήψεις προσωπικού

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

- Εμπλοκή προσωπικού
- Δυσαρέσκεια φοιτητών
- Χαμηλότερη ποιότητα παρεχόμενης φροντίδας

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

- Προσλήψεις προσωπικού
- Εκπαίδευση προσωπικού

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία 26/02/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΜΕΤΑ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα Μαρία Καίρη

Υπογραφή Συμμετέχοντα

Ημερομηνία 28/02/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Το πρόβλημα της ποιότητας είναι πιο πολύπλοκο από ότι νίσσεται, έχει πολλές πτυχές μια σταφιάτων από πολλές μεταβλητές κι όχι μόνο από την έλλειψη προσωπικού

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

Μερικές από τις αιτίες που οδηγούν στη μείωση της ποιότητας των παρεχόμενων υπηρεσιών είναι ο φόρτος εργασίας του προσωπικού, η αυξημένη προσέλευση ασθενών σε νοσοκομεία, η μη συμμόρφωση με διεθνείς οδηγίες και η έλλειψη του προσωπικού

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

Μείωση της ποιότητας των παρεχόμενων υπηρεσιών

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

1. Καλύτερη διαφημιση των δομών στις επιμέρους τα Νοσοκομεία
2. Δημιουργία εσωτερικού κανονισμού λειτουργίας σε-όλα τα τμήματα / κλινικές τα Νοσοκομεία
3. Επιπλέον προσωπικό

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία 28/02/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερωτηματολόγιο CICC

Αγαπητέ/ή συμμετέχων/ουσα στη συνεδρία ομαδικής μοντελοποίησης,

Αυτό το ερωτηματολόγιο αξιολογεί τη χρήση της μεθόδου ομαδικής μοντελοποίησης (GMB) στη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.

Αυτό το ερωτηματολόγιο εξετάζει τον επείγοντα χαρακτήρα του προβλήματος που διακυβεύεται, τα αποτελέσματα των συνεδριών μοντελοποίησης, τις επιπτώσεις των διαφόρων πτυχών της κάθε συνεδρίας, την ποιότητα της διαδικασίας μοντελοποίησης και τις προτάσεις για μελλοντικές συνεδρίες. Σας προσκαλούμε ευγενικά να απαντήσετε στις ερωτήσεις αυτές όσο καλύτερα μπορείτε. Τα αποτελέσματα αυτού του ερωτηματολογίου θα χρησιμοποιηθούν για τη βελτίωση της μεθόδου ομαδικής μοντελοποίησης που χρησιμοποιήθηκε (Group Model Building – GMB). Προτού ξεκινήσετε να αξιολογείτε τις συνεδρίες, θα θέλαμε να σας ζητήσουμε ορισμένες βασικές πληροφορίες.

Όλες οι πληροφορίες είναι εμπιστευτικές.

Η ημερομηνία γέννησής μου είναι 07/09/1980
Είμαι μέλος αυτής της οργάνωσης (Νοσοκομείο) από το 2005
Η θέση/δουλειά μου σε αυτόν τον οργανισμό (Νοσοκομείο) είναι Νοσηλεύτρια

Σας ευχαριστώ θερμά για την συνεργασία.

Αποτελέσματα της διαδικασίας μοντελοποίησης

Τα ακόλουθα ερωτήματα αποσκοπούν κυρίως στις ομαδικές συζητήσεις που διεξήχθησαν κατά την διάρκεια των συνεδριών μοντελοποίησης. Αυτά τα ερωτήματα αναφέρονται επίσης στα αποτελέσματα της ανάλυσης δεδομένων και των προσομοιώσεων. Οι απαντήσεις για τις ακόλουθες ερωτήσεις εμπίπτουν σε μία από τις πέντε κατηγορίες:

συμφωνώ απόλυτα (5)
συμφωνώ (4)
δε συμφωνώ ούτε διαφωνώ (3)
διαφωνώ (2)
διαφωνώ έντονα (1)

(Προσοχή: αντεστραμμένη κλίμακα Λικερτ, δηλαδή 5→1 αντί 1→5)

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η οπτική μου για το πρόβλημα έχει αυξηθεί λόγω της διαδικασίας μοντελοποίησης.		✓			
2. Πιστεύω ότι, εξαιτίας αυτών των συνεδριών, έχουμε φτάσει σε μια κοινή οπτική για το πρόβλημα.		✓			
3. Συμφωνώ με τα αποτελέσματα / συμπεράσματα που προέκυψαν κατά τη διαδικασία μοντελοποίησης, σε γενικές γραμμές.		✓			
4. Η διαδικασία μοντελοποίησης μου έδωσε μια καλύτερη εικόνα για τη σύνδεση μεταξύ των στοιχείων που συνθέτουν το πρόβλημα.		✓			
5. Το μοντέλο που αναπτύχθηκε ήταν αποτέλεσμα της ενσωμάτωσης διαφορετικών απόψεων και ιδεών των συμμετεχόντων.		✓			
6. Εάν εγώ και άλλοι στην οργάνωση χρησιμοποιούσαμε την ίδια προσέγγιση στο σχεδιασμό και στην αντιμετώπιση των προβλημάτων μας, όλοι θα ακολουθούσαν πιστά αυτό το σχέδιο στα φυσικά συμπεράσματά του.			✓		
7. Ως αποτέλεσμα της διαδικασίας μοντελοποίησης **δεν** είναι ακόμα σαφές για μένα ποιες είναι οι βαθιές αιτίες του προβλήματος.				✓	
8. Η διαδικασία μοντελοποίησης με βοήθησε στην κατανόηση των απόψεων των άλλων συμμετεχόντων.		✓			
9. Δεν επιτεύχθηκε καμία συμφωνία επι των πραγμάτων.				✓	
10. Η χρήση του μοντέλου βοήθησε στην επικοινωνία μεταξύ των συμμετεχόντων σχετικά με το πρόβλημα.		✓			
11. Οι απόψεις μας είναι πιο κοντά λόγω της διαδικασίας μοντελοποίησης.		✓			
12. Θα υποστηρίξω τα συμπεράσματα/πορίσματα/αποφάσεις αυτών των συναντήσεων μπροστά σε άλλα μέλη της οργάνωσής μου.		✓			
13. Η διαδικασία μοντελοποίησης μου έδωσε περισσότερες πληροφορίες για τις διαδικασίες ανατροφοδότησης (μπούμερανγκ/λούπες) που παίζουν ρόλο στο πρόβλημα.		✓			
14. Η διαδικασία μοντελοποίησης μου έδωσε ελάχιστη εικόνα των απόψεων και των ιδεών των άλλων συμμετεχόντων για το πρόβλημα.				✓	
15. Ορισμένα μόνο άτομα κυριάρχησαν στις συζητήσεις.				✓	
16. Η διαδικασία μοντελοποίησης δεν μου έδωσε αρκετές πληροφορίες για τις δυνατότητες που έχει η οργάνωσή μου για να βελτιώσει το πρόβλημα.				✓	

17. Θα προσπαθήσω να πείσω και άλλους στην οργάνωσή μου για τη σημασία αυτών των συμπερασμάτων.			✓		
18. Η χρήση μοντέλων για την προσέγγιση του προβλήματος είναι αποτελεσματική.		✓			
19. Συνολικά, πιστεύω ότι αυτές οι συνεδρίες ήταν επιτυχείς.		✓			

Εαν συγκρίνουμε τις συνεδρίες μοντελοποίησης οπου χρησιμοποιήσαμε μοντέλα, με τις κανονικές ομαδικές συναντήσεις/συνεδριάσεις/συζητήσεις/meetings στις οποίες είστε συνηθισμένοι, για παρόμοια προβλήματα όπως το πρόβλημα της ποιότητας που προσπαθήσαμε να καταλάβουμε μαζί, θα λέγατε οτι οι συνεδρίες μοντελοποίησης:

	sa 5	a 4	a/d 3	d 2	sd 1
1. Προσφέρουν περισσότερες γνώσεις σε σχέση με τις κανονικές συναντήσεις εργασίας;		✓			
2. Προσφέρουν ταχύτερα ενόραση σε σχέση με τις κανονικές συναντήσεις εργασίας;		✓			
3. Οδηγούν σε καλύτερη επικοινωνία μεταξύ των συμμετεχόντων;		✓			
4. Οδηγούν ταχύτερα σε μια κοινή οπτική μεταξύ των συμμετεχόντων;		✓			
5. Δημιουργούν μια καλύτερη κοινή οπτική μεταξύ των συμμετεχόντων;		✓			
6. Οδηγούν ταχύτερα σε μια κοινή δέσμευση των συμμετεχόντων;			✓		
7. Δημιουργούν περισσότερη δέσμευση των συμμετεχόντων;			✓		

Επιδράσεις των διαφορετικών στοιχείων/πτυχών της μεθόδου Ομαδικής Μοντελοποίησης

Οι συνεδρίες μοντελοποίησης συνδυάζουν διάφορα στοιχεία/πτυχές οι οποίες μπορεί να έχουν συμβάλει με διαφορετικούς τρόπους στο συνολικό αποτέλεσμα των συνεδριών. Στις ακόλουθες ερωτήσεις σας ζητείται να διευκρινίσετε κατά πόσο μια πτυχή συνέβαλε στο συνολικό αποτέλεσμα. Μπορείτε να το κάνετε αυτό βαθμολογώντας κάθε στοιχείο/πτυχή σε μια κλίμακα από -5 έως +5, στην οποία:

-5 = δεν είχε καμιά χρησιμότητα, εμπόδισε τις συνεδρίες.
0 = δεν εμπόδισε, αλλά δεν ήταν καθόλου χρήσιμη.
+5 = συνέβαλε πολύ.

	score -5 to +5
1. Το γεγονός ότι το μοντέλο προβάλλεται / καταγράφεται με τρόπο ορατό για όλους.	+5
2. Το γεγονός ότι ένα άτομο εξω απο την οργάνωση λειτούργησε ως «διευκολυντής ομάδας».	5
3. Η ευκαιρία για ανοιχτή και εκτενή συζήτηση επι του προβλήματος.	5
4. Η χρήση του μοντέλου.	3
5. Γραπτές αναφορές (με ερωτήσεις) μεταξύ των συνεδριών.	3
6. Συγκέντρωση των δεδομένων που απαιτούνται για το ποσοτικό μοντέλο.	3
7. Ανάλυση των δεδομένων.	4
8. Προσομοίωση, χρησιμοποιώντας το ποσοτικό μοντέλο.	
9. Άλλα, ...	

Ποιότητα των συνεδριών μοντελοποίησης

Οι ακόλουθες ερωτήσεις έχουν ως στόχο την αξιολόγηση της ποιότητας της διαδικασίας μοντελοποίησης. Με τη λέξη 'πρόβλημα' αναφερόμαστε και πάλι στον ορισμό του προβλήματος που χρησιμοποιήθηκε στη διαδικασία μοντελοποίησης: **τη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.**

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η παρούσα κατάσταση της οργάνωσής μου χαρτογραφήθηκε καλά.		✓			
2. Η περιγραφή της επιθυμητής κατάστασης που πρέπει να επιτευχθεί ήταν σωστή.		✓			
3. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκε ο σωστός ορισμός του προβλήματος.		✓			
4. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκαν όλες οι σχετικές πληροφορίες.		✓			
5. Η ανάλυση των πληροφοριών ήταν σωστή.		✓			
6. Όλα τα ζητήματα ή οι προβληματικοί τομείς που έχριζαν προσοχής, διερευνήθηκαν.		✓			
7. Στη διαδικασία μοντελοποίησης δεν συζητήθηκαν όλες οι χρήσιμες λύσεων.		✓			
8. Στη διαδικασία μοντελοποίησης επεξεργασθήκαμε τα πλεονεκτήματα και τα μειονεκτήματα των πιθανών λύσεων.			✓		
9. Η επιλογή της πιο ελπιδοφόρας λύσης(εων) βασίστηκε σε υγιή επιχειρήματα.			✓		
10. Στη διαδικασία μοντελοποίησης επιλέχθηκε η καλύτερη λύση(εις).			✓		

Προτάσεις για μελλοντικές συνεδρίες

Οι ακόλουθες ερωτήσεις μπορεί να είναι πολύ χρήσιμες για τον προγραμματισμό των μελλοντικών συνεδριών μοντελοποίησης.

Ποια ήταν τα τρία καλύτερα χαρακτηριστικά των συνεδριών;

a) Η ομαδική συζήτηση

b) Η καλή συμμετοχή των συμμετεχόντων

c) _____

Ποια ήταν τα τρία πιο απογοητευτικά χαρακτηριστικά ή προβλήματα των συνεδριών;

a) Περιορισμός χρόνου

b) _____

c) _____

Ποιες συγκεκριμένες προτάσεις θα κάνατε αν οργανωθούν ή επαναληφθούν συνεδρίες όπως αυτές;

a) Εφαρμογή περισσότερου χρόνου για τη συζήτηση

b) _____

c) _____

Σας ευχαριστώ και πάλι θερμά για τη συνεργασία σας.

Μέρος ΙΙ: Πιστοποιητικό συγκατάθεσης

Δήλωση ενήμερης συγκατάθεσης από συμμετέχοντα

Ως εμπλεκόμενος/ενδιαφερόμενος σε δημόσιο νοσοκομείο, έχω προσκληθεί να συμμετάσχω στην έρευνα της κας Αγγελικής Λενάκακη, υποψήφιας διδάκτωρ του πανεπιστημίου του Παλέρμο, για τη διδακτορική της διατριβή με τίτλο "Η υπέρβαση των ορίων της παραδοσιακής μέτρησης απόδοσης στα δημόσια νοσοκομεία: Μια δυναμική προσέγγιση διαχείρισης της απόδοσης για τη βελτίωση της ποιότητας των νοσοκομειακών υπηρεσιών».

Η φύση και ο σκοπός της έρευνας που διεξάγεται στο Νοσοκομείο, στο πλαίσιο της διδακτορικής διατριβής της κας Λενακάκη, μου εξηγήθηκε και συμφωνώ οικειοθελώς να συμμετάσχω πλήρως στις συνεδρίες μοντελοποίησης και στις συνεντεύξεις που διεξάγει η ερευνήτρια κα Λενακάκη, καθώς επίσης και να συμπληρώσω τα ερωτηματολόγια και τα βιβλία εργασίας, τα οποία θα συμβάλλουν στην διδακτορική της έρευνα και θα αποτελέσουν μέρος της διδακτορικής διατριβής και των ενδεχόμενων δημοσιεύσεων της κ. Αγγελικής Λενάκακη.

Συμφωνώ να καταγραφούν και να ηχογραφηθούν οι συνεδρίες μοντελοποίησης και οι συνεντεύξεις για ερευνητικούς σκοπούς, και κατανοώ ότι αν και η φωνή μου θα ηχογραφηθεί, η ταυτότητά μου δεν θα αποκαλυφθεί σε καμία δημοσίευση, έγγραφο, καταγραφή ή οποιοδήποτε άλλο μέσο που σχετίζονται με αυτή την έρευνα. Μόνο η ερευνήτρια κ. Λενάκακη θα έχει πρόσβαση στο ηχογραφημένο υλικό.

Έχω διαβάσει και κατανοήσει τις παραπάνω πληροφορίες του ενημερωτικού δελτίου. Είχα την ευκαιρία να θέσω ερωτήσεις σχετικά με αυτό και όλες οι ερωτήσεις που έθεσα έχουν απαντηθεί ικανοποιητικά. Συμφωνώ πλήρως και οικειοθελώς να συμμετάσχω σε αυτό το ερευνητικό πρόγραμμα, συμφωνώ ως προς την χρησιμοποίηση και επεξεργασία των προσωπικών μου δεδομένων για ερευνητικούς σκοπούς και συμφωνώ να σεβασθώ την εμπιστευτικότητα των ταυτοτήτων των άλλων συμμετεχόντων και των πληροφοριών που μου αποκαλύπτονται κατά τη διάρκεια των συνεδριών ομαδικής μοντελοποίησης.

Όνομα / Επώνυμο Συμμετέχοντα ΠΕΤΡΑΚΗ ΔΗΜΗΤΡΑ

Υπογραφή Συμμετέχοντα _____

Ημερομηνία 24/2/20
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Δήλωση του ερευνητή / ατόμου που λαμβάνει τη συγκατάθεση

Έχω διαβάσει με ακρίβεια το ενημερωτικό δελτίο στον δυνητικό συμμετέχοντα και κατά το μέγιστο των δυνατοτήτων μου επιβεβαίωσα ότι ο συμμετέχων κατανοεί ότι θα γίνουν τα εξής:
1. Τρεις Ομαδικές Συνεδρίες Μοντελοποίησης, διάρκειας πέντε ωρών η καθεμία.
2. Μία ή δύο Συνεντεύξεις, διάρκειας περίπου μίας ώρας η καθεμία.
3. Συμπλήρωση ορισμένων ερωτηματολογίων και βιβλίων εργασίας.
Επιβεβαιώνω ότι δόθηκε στον συμμετέχοντα η ευκαιρία να υποβάλει ερωτήσεις σχετικά με την έρευνα και ότι όλες οι ερωτήσεις που τέθηκαν από τον συμμετέχοντα έχουν απαντηθεί σωστά και με τον καλύτερο δυνατό τρόπο. Επιβεβαιώνω ότι ο συμμετέχων δεν εξαναγκάσθηκε με κανένα τρόπο ούτε πιέσθηκε να δώσει τη συγκατάθεσή του, αλλα αντίθετα η συγκατάθεση δόθηκε ελεύθερα και οικειοθελώς.

Ένα αντίγραφο αυτού του πιστοποιητικού συγκατάθεσης έχει παρασχεθεί στον συμμετέχοντα.

Όνομα ερευνητή / προσώπου που λαμβάνει τη συγκατάθεση _____
Υπογραφή ερευνητή / που λαμβάνει τη συγκατάθεση _____
Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ ΚΟΙΝΟΥ ΠΛΑΙΣΙΟΥ ΑΞΙΟΛΟΓΗΣΗΣ
για ΣΥΜΠΛΗΡΩΣΗ ΑΠΟ ΚΟΙΝΩΝΙΚΟΥΣ ΦΟΡΕΙΣ

Υποκριτήριο 8.1 Σκεφτείτε τι επιτυγχάνει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **Μετρήσεων Αντίληψης**

Οι μετρήσεις αντίληψης επικεντρώνονται στην αντίληψη της κοινότητας, για τις επιδόσεις της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από εμπλεκόμενους εκτός Νοσοκομείου. Η μέτρηση της αντίληψης συνιστά ένδειξη της αποτελεσματικότητας των κοινωνικών και περιβαλλοντικών στρατηγικών. Περιλαμβάνει την οπτική γωνία για τη διαφάνεια, τον αντίκτυπο για την ποιότητα ζωής και την ποιότητα της δημοκρατίας, την οπτική για τη δεοντολογία ως προς την υποστήριξη των πολιτών/ασθενών, την προσέγγιση και τα αποτελέσματα για τα κοινωνικά και περιβαλλοντικά θέματα.

Α/Α	Ερώτηση	Απάντηση	
		Καθόλου	(0)
		Πολύ Λίγο	(1)
		Λίγο	(2)
		Πολύ	(3)
		Πάρα Πολύ	(4)
		Απόλυτα	(5)

1	Σε ποιο βαθμό θεωρείτε ότι το κοινό ενημερώνεται για συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)στη βελτίωση της ποιότητας ζωής των πολιτών της περιοχής εντός της οποίας δραστηριοποιείται; (π.χ. πρόγραμμα προαγωγής υγείας, δράσεις για ευπαθείς ομάδες, κ.λπ.)	0	1	2	3	4	5
2	Σε ποιο βαθμό κρίνετε τη δημόσια εικόνα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) ως θετική;	0	1	2	3	4	5
3	Σε ποιο βαθμό κρίνετε ικανοποιητικά τα αποτελέσματα των επαφών και της συνεργασίας της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με τους τοπικούς κοινωνικούς φορείς;	0	1	2	3	4	5
4	Σε ποιο βαθμό θεωρείτε ικανοποιητικές τις αλλαγές που επέρχονται στη λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), ως αποτέλεσμα της προσπάθειας ανταπόκρισης στις μεταβολές του κοινωνικού περιβάλλοντος;	0	1	2	3	4	5
5	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), την οικονομία της περιοχής εντός της οποίας δραστηριοποιείται; (*π.χ. δημιουργία/προσέλκυση μικρών επιχειρηματικών δραστηριοτήτων που έχουν χωροταξική εγγύτητα, δημιουργία δημόσιων δρόμων ή μέσων μαζικής μεταφοράς που εξυπηρετούν και τους υφιστάμενους οικονομικά δρώντες*).	0	1	2	3	4	5
6	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)την κοινωνία της περιοχής εντός της οποίας δραστηριοποιείται, λαμβάνοντας υπόψη την ποιότητα της δημοκρατικής συμμετοχής των πολιτών;	0	1	2	3	4	5
7	Σε ποιο βαθμό θεωρείτε ικανοποιητική την υποστήριξη των Α.Μ.Ε.Α. από το τη Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ);	0	1	2	3	4	5
8	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη λειτουργία της	0	1	2	3	4	5

	Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την προστασία του περιβάλλοντος; (*προσπάθειες εξοικονόμησης ενέργειας, χρήση εναλλακτικών πηγών ενέργειας, διαχείριση αποβλήτων, συμμόρφωση σε περιβαλλοντικές προδιαγραφές, κ.τ.λ.*)						
9	Σε ποιο βαθμό θεωρείτε ότι η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)είναι ανοικτή σε τρίτους και διαφανής; (*π.χ. τήρηση αρχών/αξιών όπως ισότητα, συνέχεια, κ.λπ.*)	0	1	2	3	4	5
10	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη δημοσιογραφική κάλυψη των δραστηριοτήτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.;	0	1	2	3	4	5

Υποκριτήριο 8.2 Σκεφτείτε τι επιτυγχάνει την Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **μετρήσεων απόδοσης σχετικά με την κοινωνία**

Οι μετρήσεις απόδοσης εστιάζουν στα μέτρα που χρησιμοποιούνται από το Νοσοκομείο για να ελέγξει, να κατανοήσει, να προβλέψει και να βελτιώσει τις επιδόσεις σχετικά με την κοινωνική του ευθύνη. Θα πρέπει να δοθεί μια σαφής ένδειξη της αποτελεσματικότητας των προσεγγίσεων του Νοσοκομείου, για τα κοινωνικά θέματα. Οι μετρήσεις απόδοσης μπορούν να εξετάζουν τη δεοντολογία, τις πρωτοβουλίες και τα αποτελέσματα της πρόληψης των κινδύνων για την υγεία, τις πρωτοβουλίες για την ανταλλαγή γνώσεων, τις πρωτοβουλίες για τη διατήρηση των πόρων και τη μείωση των περιβαλλοντικών επιπτώσεων κ.λπ.

Α/Α	Ερώτηση	Απάντηση					
		Καθόλου	(0)				
		Πολύ Λίγο	(1)				
		Λίγο	(2)				
		Πολύ	(3)				
		Πάρα Πολύ	(4)				
		Απόλυτα	(5)				
1	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι σχέσεις με άλλα (αντίστοιχα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)) Τμήματα και κοινωνικούς φορείς, αρμόδιες αρχές, κ.λπ;	0	1	2	3	4	5
2	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι προσπάθειες που καταβάλλει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την αντιμετώπιση των προβλημάτων ευπαθών ομάδων πληθυσμού; (*συμβολή Γραφείου Προστασίας Δικαιωμάτων Ληπτών Υπηρεσιών Υγείας στις ευπαθείς ομάδες, κοινωνική υπηρεσία, κ.λπ.*)	0	1	2	3	4	5
3	Σε ποιο βαθμό κρίνετε ικανοποιητική την κάλυψη των θεμάτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.; (έχει αναφερθεί η ίδια ερώτηση πιο πάνω πεδίο 10)	0	1	2	3	4	5
4	Σε ποιο βαθμό κρίνετε ικανοποιητική την συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) στον σχεδιασμό, στη χρηματοδότηση και στην υλοποίηση διεθνών προγραμμάτων και στη συμμετοχή των εργαζομένων σε φιλανθρωπικές δραστηριότητες	0	1	2	3	4	5
5	Σε ποιο βαθμό ενθαρρύνει την Μονάδα	0	1	2	3	4	5

	(Εμφραγμάτων/ΜΝ/ΜΕΘ), τους υπαλλήλους του, αλλά και τους πολίτες/ασθενείς, που έρχονται σε επαφή με αυτό να ασχολούνται με κοινωνικά ζητήματα και να δραστηριοποιούνται στο χώρο της κοινωνίας των πολιτών/ασθενών;						
6	Σε ποιο βαθμό θεωρείτε παραγωγική την ανταλλαγή γνώσης και εμπειριών της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με κοινωνικούς φορείς;	0	1	2	3	4	5
7	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ) αναλαμβάνει πρωτοβουλίες πρόληψης κινδύνων υγείας και ατυχημάτων, για τους υπαλλήλους , αλλά και για τους πολίτες/ασθενείς με τους οποίους συναλλάσσεται; (λήψη προληπτικών μέτρων έναντι κινδύνων, καταπολέμηση καπνίσματος, συνεργασία με «φίλιες» δυνάμεις στην αντιμετώπιση Εκτάκτων Αναγκών, παρεμβάσεις Επιτροπής Νοσοκομειακών Λοιμώξεων, κ.λπ.)	0	1	2	3	4	5
8	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ)έχει εκπονήσει/σχεδιάσει δράσεις για τη διαχείριση των πόρων και για την προστασία του περιβάλλοντος (ανακύκλωση, περιβαλλοντικά πρότυπα, ενέργεια κτλ);	0	1	2	3	4	5

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΠΡΙΝ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα Περάκη Δήμητρα

Υπογραφή Συμμετέχοντα

Ημερομηνία 24/2/20
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε ποιο θεωρείτε εσείς ως το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Κεντρικό πρόβλημα είναι η έλλειψη προσωπικού και η έλλειψη οικονομικών πόρων.

Σημαντικό πρόβλημα του τύπου που αφορά την έρευνα σας θεωρώ ότι είναι η έλλειψη καταγραφής ή η υποτίμηση των νοσηλευτικών φύρων εφαρίας και η έλλειψη αναγνώρισης του παραγόμενου έργου

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

- Πολιτικές αμοιβότητες
- Έλλειψη συμμετοχής στις αποφάσεις
- Κυκλικό μέρος - περιορισμένος χρόνος ανάπαυσης
- Νέοι για επίτευξη διαρκούς αυξανόμενων προϊόντων κόστους
- Ταχεία ανταπόκριση τεχνολογικών αλλαγών ή προσαρμογή
- αυξημένες απαιτήσεις γνώσεων ή δεξιοτήτων.

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

- Αυξημένα επίπεδα στρες
- Θυμός - διαμάχες
- Ψυχοσωματικά συμπτώματα
- Επαγγελματική εξουθένωση
- Δίψα πιθανώτατα για φαΐ

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

- καταγραφή νοσηλευτικού φόρτου
- καταμερισμός ή υποστήριξη κατά την εφαρμογή
- Εκβραση ή διενέργεση συναντήσεων ε' προσωπικών.

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΜΕΤΑ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα ΤΣΟΥΡΑΚΗ ΔΗΜΗΤΡΑ

Υπογραφή Συμμετέχοντα

Ημερομηνία 28/2/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Εξακολουθώ να πιστεύω ότι η εμπειρία νοσηλευτών είναι το βασικό θέμα μαζί με την εμπειρία γιατρών που επεμβαίνουν στο πρόσωπο της δωρεάς.

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

Αναδείχθηκε το κόστος του φόρτου εργασίας πάνω έξω από τον αριθμό των κλινών αναφοράς και τον αριθμό των γιατρών εντατικής υγείας και των τύπων παρεμβάσεων μεταμοσχεύσεων.
Διαπραγμάτευση των νοσοκομείων με άτομους τύπους (πχ. δίκτυο οργάνων, ομάδες μεταμοσχεύσεων κλπ κ.α)

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

Χαμηλότερα ποσοστά δασοκάλυψης σε σχέση με το θεσμικό

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

Οι τρόποι αντιμετώπισης θα μπορούσαν όμως εκτός από τον περιορισμό περσωπικά μπορεί να αφορούν την διαδικασία λαμβάνουν των μητρών, την διαδικασία ανάθεση αρμοδιοτήτων, υποχρέωσης των περσωπικά με άλλων νόμων όπως ομάδες υποχρέωσης ή διαχείρισης των σκέτς

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερωτηματολόγιο CICC

Αγαπητέ/ή συμμετέχων/ουσα στη συνεδρία ομαδικής μοντελοποίησης,

Αυτό το ερωτηματολόγιο αξιολογεί τη χρήση της μεθόδου ομαδικής μοντελοποίησης (GMB) στη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.

Αυτό το ερωτηματολόγιο εξετάζει τον επείγοντα χαρακτήρα του προβλήματος που διακυβεύεται, τα αποτελέσματα των συνεδριών μοντελοποίησης, τις επιπτώσεις των διαφόρων πτυχών της κάθε συνεδρίας, την ποιότητα της διαδικασίας μοντελοποίησης και τις προτάσεις για μελλοντικές συνεδρίες. Σας προσκαλούμε ευγενικά να απαντήσετε στις ερωτήσεις αυτές όσο καλύτερα μπορείτε. Τα αποτελέσματα αυτού του ερωτηματολογίου θα χρησιμοποιηθούν για τη βελτίωση της μεθόδου ομαδικής μοντελοποίησης που χρησιμοποιήθηκε (Group Model Building – GMB). Προτού ξεκινήσετε να αξιολογείτε τις συνεδρίες, θα θέλαμε να σας ζητήσουμε ορισμένες βασικές πληροφορίες.

Όλες οι πληροφορίες είναι εμπιστευτικές.

Η ημερομηνία γέννησής μου είναι 1972
Είμαι μέλος αυτής της οργάνωσης (Νοσοκομείο) από 1998
Η θέση/δουλειά μου σε αυτόν τον οργανισμό (Νοσοκομείο) είναι ΠΡΟΪΣΤΑΜΕΝΗ ΝΟΣΗΛΕΥΤΙΚΟΥ ΤΜΗΜΑΤΟΣ

Σας ευχαριστώ θερμά για την συνεργασία.

Αποτελέσματα της διαδικασίας μοντελοποίησης

Τα ακόλουθα ερωτήματα αποσκοπούν κυρίως στις ομαδικές συζητήσεις που διεξήχθησαν κατά την διάρκεια των συνεδριών μοντελοποίησης. Αυτά τα ερωτήματα αναφέρονται επίσης στα αποτελέσματα της ανάλυσης δεδομένων και των προσομοιώσεων. Οι απαντήσεις για τις ακόλουθες ερωτήσεις εμπίπτουν σε μία από τις πέντε κατηγορίες:

συμφωνώ απόλυτα (5)
συμφωνώ (4)
δε συμφωνώ ούτε διαφωνώ (3)
διαφωνώ (2)
διαφωνώ έντονα (1)

(Προσοχή: αντεστραμμένη κλίμακα Λικερτ, δηλαδή 5→1 αντί 1→5)

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η οπτική μου για το πρόβλημα έχει αυξηθεί λόγω της διαδικασίας μοντελοποίησης.	X				
2. Πιστεύω ότι, εξαιτίας αυτών των συνεδριών, έχουμε φτάσει σε μια κοινή οπτική για το πρόβλημα.	X				
3. Συμφωνώ με τα αποτελέσματα / συμπεράσματα που προέκυψαν κατά τη διαδικασία μοντελοποίησης, σε γενικές γραμμές.	X				
4. Η διαδικασία μοντελοποίησης μου έδωσε μια καλύτερη εικόνα για τη σύνδεση μεταξύ των στοιχείων που συνθέτουν το πρόβλημα.	X				
5. Το μοντέλο που αναπτύχθηκε ήταν αποτέλεσμα της ενσωμάτωσης διαφορετικών απόψεων και ιδεών των συμμετεχόντων.	X				
6. Εάν εγώ και άλλοι στην οργάνωση χρησιμοποιούσαμε την ίδια προσέγγιση στο σχεδιασμό και στην αντιμετώπιση των προβλημάτων μας, όλοι θα ακολουθούσαν πιστά αυτό το σχέδιο στα φυσικά συμπεράσματά του.	X				
7. Ως αποτέλεσμα της διαδικασίας μοντελοποίησης δεν είναι ακόμα σαφές για μένα ποιες είναι οι βαθιές αιτίες του προβλήματος.					X
8. Η διαδικασία μοντελοποίησης με βοήθησε στην κατανόηση των απόψεων των άλλων συμμετεχόντων.	X				
9. Δεν επιτεύχθηκε καμία συμφωνία επι των πραγμάτων.					X
10. Η χρήση του μοντέλου βοήθησε στην επικοινωνία μεταξύ των συμμετεχόντων σχετικά με το πρόβλημα.	X				
11. Οι απόψεις μας είναι πιο κοντά λόγω της διαδικασίας μοντελοποίησης.		X			
12. Θα υποστηρίξω τα συμπεράσματα/πορίσματα/αποφάσεις αυτών των συναντήσεων μπροστά σε άλλα μέλη της οργάνωσής μου.	X				
13. Η διαδικασία μοντελοποίησης μου έδωσε περισσότερες πληροφορίες για τις διαδικασίες ανατροφοδότησης (μπούμερανγκ/λούπες) που παίζουν ρόλο στο πρόβλημα.	X				
14. Η διαδικασία μοντελοποίησης μου έδωσε ελάχιστη εικόνα των απόψεων και των ιδεών των άλλων συμμετεχόντων για το πρόβλημα.					X
15. Ορισμένα μόνο άτομα κυριάρχησαν στις συζητήσεις.		X			
16. Η διαδικασία μοντελοποίησης δεν μου έδωσε αρκετές πληροφορίες για τις δυνατότητες που έχει η οργάνωσή μου για να βελτιώσει το πρόβλημα.					X

17. Θα προσπαθήσω να πείσω και άλλους στην οργάνωσή μου για τη σημασία αυτών των συμπερασμάτων.	X				
18. Η χρήση μοντέλων για την προσέγγιση του προβλήματος είναι αποτελεσματική.	X				
19. Συνολικά, πιστεύω ότι αυτές οι συνεδρίες ήταν επιτυχείς.	X				

Εαν συγκρίνουμε τις συνεδρίες μοντελοποίησης οπου χρησιμοποιήσαμε μοντέλα, με τις κανονικές ομαδικές συναντήσεις/συνεδριάσεις/συζητήσεις/meetings στις οποίες είστε συνηθισμένοι, για παρόμοια προβλήματα όπως το πρόβλημα της ποιότητας που προσπαθήσαμε να καταλάβουμε μαζί, θα λέγατε οτι οι συνεδρίες μοντελοποίησης:

	sa 5	a 4	a/d 3	d 2	sd 1
1. Προσφέρουν περισσότερες γνώσεις σε σχέση με τις κανονικές συναντήσεις εργασίας;	X				
2. Προσφέρουν ταχύτερα ενόραση σε σχέση με τις κανονικές συναντήσεις εργασίας;	✓				
3. Οδηγούν σε καλύτερη επικοινωνία μεταξύ των συμμετεχόντων;	X				
4. Οδηγούν ταχύτερα σε μια κοινή οπτική μεταξύ των συμμετεχόντων;	X				
5. Δημιουργούν μια καλύτερη κοινή οπτική μεταξύ των συμμετεχόντων;	X				
6. Οδηγούν ταχύτερα σε μια κοινή δέσμευση των συμμετεχόντων;	X				
7. Δημιουργούν περισσότερη δέσμευση των συμμετεχόντων;	X				

Επιδράσεις των διαφορετικών στοιχείων/πτυχών της μεθόδου Ομαδικής Μοντελοποίησης

Οι συνεδρίες μοντελοποίησης συνδυάζουν διάφορα στοιχεία/πτυχές οι οποίες μπορεί να έχουν συμβάλει με διαφορετικούς τρόπους στο συνολικό αποτέλεσμα των συνεδριών. Στις ακόλουθες ερωτήσεις σας ζητείται να διευκρινίσετε κατά πόσο μια πτυχή συνέβαλε στο συνολικό αποτέλεσμα. Μπορείτε να το κάνετε αυτό βαθμολογώντας κάθε στοιχείο/πτυχή σε μια κλίμακα από -5 έως +5, στην οποία:

-5 = δεν είχε καμιά χρησιμότητα, εμπόδισε τις συνεδρίες.
0 = δεν εμπόδισε, αλλά δεν ήταν καθόλου χρήσιμη.
+5 = συνέβαλε πολύ.

	score -5 to +5
1. Το γεγονός ότι το μοντέλο προβάλλεται / καταγράφεται με τρόπο ορατό για όλους.	+5
2. Το γεγονός ότι ένα άτομο εξω απο την οργάνωση λειτούργησε ως «διευκολυντής ομάδας».	+5
3. Η ευκαιρία για ανοιχτή και εκτενή συζήτηση επι του προβλήματος.	+5
4. Η χρήση του μοντέλου.	+5
5. Γραπτές αναφορές (με ερωτήσεις) μεταξύ των συνεδριών.	+5
6. Συγκέντρωση των δεδομένων που απαιτούνται για το ποσοτικό μοντέλο.	+5
7. Ανάλυση των δεδομένων.	+5
8. Προσομοίωση, χρησιμοποιώντας το ποσοτικό μοντέλο.	+5
9. Άλλα, ...	

Ποιότητα των συνεδριών μοντελοποίησης

Οι ακόλουθες ερωτήσεις έχουν ως στόχο την αξιολόγηση της ποιότητας της διαδικασίας μοντελοποίησης. Με τη λέξη 'πρόβλημα' αναφερόμαστε και πάλι στον ορισμό του προβλήματος που χρησιμοποιήθηκε στη διαδικασία μοντελοποίησης: **τη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.**

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η παρούσα κατάσταση της οργάνωσής μου χαρτογραφήθηκε καλά.	X				
2. Η περιγραφή της επιθυμητής κατάστασης που πρέπει να επιτευχθεί ήταν σωστή.	.	X			
3. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκε ο σωστός ορισμός του προβλήματος.		X			
4. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκαν όλες οι σχετικές πληροφορίες.		X			
5. Η ανάλυση των πληροφοριών ήταν σωστή.		X			
6. Όλα τα ζητήματα ή οι προβληματικοί τομείς που έχριζαν προσοχής, διερευνήθηκαν.		X			
7. Στη διαδικασία μοντελοποίησης δεν συζητήθηκαν όλες οι χρήσιμες λύσεων.			X		
8. Στη διαδικασία μοντελοποίησης επεξεργασθήκαμε τα πλεονεκτήματα και τα μειονεκτήματα των πιθανών λύσεων.			X		
9. Η επιλογή της πιο ελπιδοφόρας λύσης(εων) βασίστηκε σε υγιή επιχειρήματα.			X		
10. Στη διαδικασία μοντελοποίησης επιλέχθηκε η καλύτερη λύση(εις).			X		

Προτάσεις για μελλοντικές συνεδρίες

Οι ακόλουθες ερωτήσεις μπορεί να είναι πολύ χρήσιμες για τον προγραμματισμό των μελλοντικών συνεδριών μοντελοποίησης.

Ποια ήταν τα τρία καλύτερα χαρακτηριστικά των συνεδριών;

a) οργάνωση – δημιουργία μοντέλου

b) ανάπτυξη του προβλήματος – διάλογος

c)

Ποια ήταν τα τρία πιο απογοητευτικά χαρακτηριστικά ή προβλήματα των συνεδριών;

a) έλλειψη του απαιτούμενου χρόνου

b)

c)

Ποιες συγκεκριμένες προτάσεις θα κάνατε αν οργανωθούν ή επαναληφθούν συνεδρίες όπως αυτές;

a) περισσότερος χρόνος

b)

c)

Σας ευχαριστώ και πάλι θερμά για τη συνεργασία σας.

Μέρος ΙΙ: Πιστοποιητικό συγκατάθεσης

Δήλωση ενήμερης συγκατάθεσης από συμμετέχοντα

Ως εμπλεκόμενος/ενδιαφερόμενος σε δημόσιο νοσοκομείο, έχω προσκληθεί να συμμετάσχω στην έρευνα της κας Αγγελικής Λενάκακη, υποψήφιας διδάκτωρ του πανεπιστημίου του Παλέρμο, για τη διδακτορική της διατριβή με τίτλο "Η υπέρβαση των ορίων της παραδοσιακής μέτρησης απόδοσης στα δημόσια νοσοκομεία: Μια δυναμική προσέγγιση διαχείρισης της απόδοσης για τη βελτίωση της ποιότητας των νοσοκομειακών υπηρεσιών».

Η φύση και ο σκοπός της έρευνας που διεξάγεται στο Νοσοκομείο, στο πλαίσιο της διδακτορικής διατριβής της κας Λενακάκη, μου εξηγήθηκε και συμφωνώ οικειοθελώς να συμμετάσχω πλήρως στις συνεδρίες μοντελοποίησης και στις συνεντεύξεις που διεξάγει η ερευνήτρια κα Λενακάκη, καθώς επίσης και να συμπληρώσω τα ερωτηματολόγια και τα βιβλία εργασίας, τα οποία θα συμβάλλουν στην διδακτορική της έρευνα και θα αποτελέσουν μέρος της διδακτορικής διατριβής και των ενδεχόμενων δημοσιεύσεων της κ. Αγγελικής Λενάκακη.

Συμφωνώ να καταγραφούν και να ηχογραφηθούν οι συνεδρίες μοντελοποίησης και οι συνεντεύξεις για ερευνητικούς σκοπούς, και κατανοώ ότι αν και η φωνή μου θα ηχογραφηθεί, η ταυτότητά μου δεν θα αποκαλυφθεί σε καμία δημοσίευση, έγγραφο, καταγραφή ή οποιοδήποτε άλλο μέσο που σχετίζονται με αυτή την έρευνα. Μόνο η ερευνήτρια κ. Λενάκακη θα έχει πρόσβαση στο ηχογραφημένο υλικό.

Έχω διαβάσει και κατανοήσει τις παραπάνω πληροφορίες του ενημερωτικού δελτίου. Είχα την ευκαιρία να θέσω ερωτήσεις σχετικά με αυτό και όλες οι ερωτήσεις που έθεσα έχουν απαντηθεί ικανοποιητικά. Συμφωνώ πλήρως και οικειοθελώς να συμμετάσχω σε αυτό το ερευνητικό πρόγραμμα, συμφωνώ ως προς την χρησιμοποίηση και επεξεργασία των προσωπικών μου δεδομένων για ερευνητικούς σκοπούς και συμφωνώ να σεβασθώ την εμπιστευτικότητα των ταυτοτήτων των άλλων συμμετεχόντων και των πληροφοριών που μου αποκαλύπτονται κατά τη διάρκεια των συνεδριών ομαδικής μοντελοποίησης.

Όνομα / Επώνυμο Συμμετέχοντα Μαρία Παζιανούλη

Υπογραφή Συμμετέχοντα [signature]

Ημερομηνία 17/2/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Δήλωση του ερευνητή / ατόμου που λαμβάνει τη συγκατάθεση

Έχω διαβάσει με ακρίβεια το ενημερωτικό δελτίο στον δυνητικό συμμετέχοντα και κατά το μέγιστο των δυνατοτήτων μου επιβεβαίωσα ότι ο συμμετέχων κατανοεί ότι θα γίνουν τα εξής:
1. Τρεις Ομαδικές Συνεδρίες Μοντελοποίησης, διάρκειας πέντε ωρών η καθεμία.
2. Μία ή δύο Συνεντεύξεις, διάρκειας περίπου μίας ώρας η καθεμία.
3. Συμπλήρωση ορισμένων ερωτηματολογίων και βιβλίων εργασίας.

Επιβεβαιώνω ότι δόθηκε στον συμμετέχοντα η ευκαιρία να υποβάλει ερωτήσεις σχετικά με την έρευνα και ότι όλες οι ερωτήσεις που τέθηκαν από τον συμμετέχοντα έχουν απαντηθεί σωστά και με τον καλύτερο δυνατό τρόπο. Επιβεβαιώνω ότι ο συμμετέχων δεν εξαναγκάσθηκε με κανένα τρόπο ούτε πιέσθηκε να δώσει τη συγκατάθεσή του, αλλά αντίθετα η συγκατάθεση δόθηκε ελεύθερα και οικειοθελώς.

Ένα αντίγραφο αυτού του πιστοποιητικού συγκατάθεσης έχει παρασχεθεί στον συμμετέχοντα.

Όνομα ερευνητή / προσώπου που λαμβάνει τη συγκατάθεση _____
Υπογραφή ερευνητή / που λαμβάνει τη συγκατάθεση _____
Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ ΚΟΙΝΟΥ ΠΛΑΙΣΙΟΥ ΑΞΙΟΛΟΓΗΣΗΣ
για ΣΥΜΠΛΗΡΩΣΗ ΑΠΟ ΚΟΙΝΩΝΙΚΟΥΣ ΦΟΡΕΙΣ

Υποκριτήριο 8.1 Σκεφτείτε τι επιτυγχάνει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **Μετρήσεων Αντίληψης**

Οι μετρήσεις αντίληψης επικεντρώνονται στην αντίληψη της κοινότητας, για τις επιδόσεις της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από εμπλεκόμενους εκτός Νοσοκομείου. Η μέτρηση της αντίληψης συνιστά ένδειξη της αποτελεσματικότητας των κοινωνικών και περιβαλλοντικών στρατηγικών. Περιλαμβάνει την οπτική γωνία για τη διαφάνεια, τον αντίκτυπο για την ποιότητα ζωής και την ποιότητα της δημοκρατίας, την οπτική για τη δεοντολογία ως προς την υποστήριξη των πολιτών/ασθενών, την προσέγγιση και τα αποτελέσματα για τα κοινωνικά και περιβαλλοντικά θέματα.

Α/Α	Ερώτηση	Απάντηση	
		Καθόλου	(0)
		Πολύ Λίγο	(1)
		Λίγο	(2)
		Πολύ	(3)
		Πάρα Πολύ	(4)
		Απόλυτα	(5)

Α/Α	Ερώτηση						
1	Σε ποιο βαθμό θεωρείτε ότι το κοινό ενημερώνεται για συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)στη βελτίωση της ποιότητας ζωής των πολιτών της περιοχής εντός της οποίας δραστηριοποιείται; (π.χ. πρόγραμμα προαγωγής υγείας, δράσεις για ευπαθείς ομάδες, κ.λπ.)	0	1	2	3	4	5
			x				
2	Σε ποιο βαθμό κρίνετε τη δημόσια εικόνα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) ως θετική;	0	1	2	3	4	5
					x		
3	Σε ποιο βαθμό κρίνετε ικανοποιητικά τα αποτελέσματα των επαφών και της συνεργασίας της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με τους τοπικούς κοινωνικούς φορείς;	0	1	2	3	4	5
				x			
4	Σε ποιο βαθμό θεωρείτε ικανοποιητικές τις αλλαγές που επέρχονται στη λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), ως αποτέλεσμα της προσπάθειας ανταπόκρισης στις μεταβολές του κοινωνικού περιβάλλοντος;	0	1	2	3	4	5
					x		
5	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), την οικονομία της περιοχής εντός της οποίας δραστηριοποιείται; (*π.χ. δημιουργία/προσέλκυση μικρών επιχειρηματικών δραστηριοτήτων που έχουν χωροταξική εγγύτητα, δημιουργία δημόσιων δρόμων ή μέσων μαζικής μεταφοράς που εξυπηρετούν και τους υφιστάμενους οικονομικά δρώντες*).	0	1	2	3	4	5
		x					
6	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)την κοινωνία της περιοχής εντός της οποίας δραστηριοποιείται, λαμβάνοντας υπόψη την ποιότητα της δημοκρατικής συμμετοχής των πολιτών;	0	1	2	3	4	5
		x					
7	Σε ποιο βαθμό θεωρείτε ικανοποιητική την υποστήριξη των Α.Μ.Ε.Α. από το τη Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ);	0	1	2	3	4	5
						x	
8	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη λειτουργία της	0	1	2	3	4	5

	Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την προστασία του περιβάλλοντος; (*προσπάθειες εξοικονόμησης ενέργειας, χρήση εναλλακτικών πηγών ενέργειας, διαχείριση αποβλήτων, συμμόρφωση σε περιβαλλοντικές προδιαγραφές, κ.τ.λ.*)				x		
9	Σε ποιο βαθμό θεωρείτε ότι η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)είναι ανοικτή σε τρίτους και διαφανής; (*π.χ. τήρηση αρχών/αξιών όπως ισότητα, συνέχεια, κ.λπ.*)	0	1	2	3	4	5
					x		
10	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη δημοσιογραφική κάλυψη των δραστηριοτήτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.;	0	1	2	3	4	5
			x				

Υποκριτήριο 8.2 Σκεφτείτε τι επιτυγχάνει την Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **μετρήσεων απόδοσης σχετικά με την κοινωνία**

Οι μετρήσεις απόδοσης εστιάζουν στα μέτρα που χρησιμοποιούνται από το Νοσοκομείο για να ελέγξει, να κατανοήσει, να προβλέψει και να βελτιώσει τις επιδόσεις σχετικά με την κοινωνική του ευθύνη. Θα πρέπει να δοθεί μια σαφής ένδειξη της αποτελεσματικότητας των προσεγγίσεων του Νοσοκομείου, για τα κοινωνικά θέματα. Οι μετρήσεις απόδοσης μπορούν να εξετάζουν τη δεοντολογία, τις πρωτοβουλίες και τα αποτελέσματα της πρόληψης των κινδύνων για την υγεία, τις πρωτοβουλίες για την ανταλλαγή γνώσεων, τις πρωτοβουλίες για τη διατήρηση των πόρων και τη μείωση των περιβαλλοντικών επιπτώσεων κ.λπ.

Α/Α	Ερώτηση	Απάντηση					
		Καθόλου			(0)		
		Πολύ Λίγο			(1)		
		Λίγο			(2)		
		Πολύ			(3)		
		Πάρα Πολύ			(4)		
		Απόλυτα			(5)		
1	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι σχέσεις με άλλα (αντίστοιχα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)) Τμήματα και κοινωνικούς φορείς, αρμόδιες αρχές, κ.λπ;	0	1	2	3	4	5
						x	
2	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι προσπάθειες που καταβάλλει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την αντιμετώπιση των προβλημάτων ευπαθών ομάδων πληθυσμού; (*συμβολή Γραφείου Προστασίας Δικαιωμάτων Ληπτών Υπηρεσιών Υγείας στις ευπαθείς ομάδες, κοινωνική υπηρεσία, κ.λπ.*)	0	1	2	3	4	5
						x	
3	Σε ποιο βαθμό κρίνετε ικανοποιητική την κάλυψη των θεμάτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.; (έχει αναφερθεί η ίδια ερώτηση πιο πάνω πεδίο 10)	0	1	2	3	4	5
			x				
4	Σε ποιο βαθμό κρίνετε ικανοποιητική την συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) στον σχεδιασμό, στη χρηματοδότηση και στην υλοποίηση διεθνών προγραμμάτων και στη συμμετοχή των εργαζομένων σε φιλανθρωπικές δραστηριότητες	0	1	2	3	4	5
				x			
5	Σε ποιο βαθμό ενθαρρύνει την Μονάδα	0	1	2	3	4	5

	(Εμφραγμάτων/ΜΝ/ΜΕΘ), τους υπαλλήλους του, αλλά και τους πολίτες/ασθενείς, που έρχονται σε επαφή με αυτό να ασχολούνται με κοινωνικά ζητήματα και να δραστηριοποιούνται στο χώρο της κοινωνίας των πολιτών/ασθενών;			x			
6	Σε ποιο βαθμό θεωρείτε παραγωγική την ανταλλαγή γνώσης και εμπειριών της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με κοινωνικούς φορείς;	0	1	2	3	4	5
				x			
7	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ) αναλαμβάνει πρωτοβουλίες πρόληψης κινδύνων υγείας και ατυχημάτων, για τους υπαλλήλους , αλλά και για τους πολίτες/ασθενείς με τους οποίους συναλλάσσεται; (λήψη προληπτικών μέτρων έναντι κινδύνων, καταπολέμηση καπνίσματος, συνεργασία με «φίλιες» δυνάμεις στην αντιμετώπιση Εκτάκτων Αναγκών, παρεμβάσεις Επιτροπής Νοσοκομειακών Λοιμώξεων, κ.λπ.)	0	1	2	3	4	5
						x	
8	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ)έχει εκπονήσει/σχεδιάσει δράσεις για τη διαχείριση των πόρων και για την προστασία του περιβάλλοντος (ανακύκλωση, περιβαλλοντικά πρότυπα, ενέργεια κτλ);	0	1	2	3	4	5
					x		

University of Palermo
Department of International Studies and Political Science (DEMS) - System Dynamics Group
International PhD in Model Based Public Planning, Policy Design and Management
PhD Candidate: Angeliki Lenakaki

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΠΡΙΝ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα Μαρία Χατζηστέφου

Υπογραφή Συμμετέχοντα [signature]

Ημερομηνία 17/2/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε ποιο θεωρείτε εσείς ως το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Τεχνητού Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Δεν Μν. Εφαρμόζουν δεν παρέχεται εξατομικευμένη νοσηλευτική φροντίδα στον ασθενή.

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

→ μειωμένος αριθμός νοσ/κού προσωπικού
→ μη εκπαιδευμένο καταλληλα νοσ/κο προσωπικό.
→ ακαταλληλα έντυπα καταγραφής νοσ/κής φροντίδας
→ Εφαρμοζόμενο σύστημα νοσ/κής φροντίδας με βάση τις εργασίες (task-oriented) από για τον ασθενή (patient oriented).
→ υπάρχουσα κουλτούρα στον συγκεκριμένο νοσ/κό χώρο.

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

→ Δεν καλύπτονται σήμερα όλες οι ανάγκες του ασθενούς
→ Οι καταγραφές δεν είναι αξιοποιήσιμες για εξαγωγή στατιστικά συμπερασμάτων κ' μέτρηση της ποιότητας της νοσ/κής φροντίδας

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

→ Ενσωμάτωση κ' πρόσληψη προσωπικού
→ Αλλαγή στάσεων
→ " συστήματος παροχής νοσ/κής φροντίδας

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΠΡΙΝ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα ΑΣΑΜΑΝΤΙΑ ΕΠΤΑΕΖΟΠΟΥΛΟΥ

Υπογραφή Συμμετέχοντα

Ημερομηνία 25/02/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε ποιο θεωρείτε εσείς ως το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

- Η εφαρμογή σωστών διαδικασιών από όλους τους εμπλεκομένους στη διαχείριση των ασθενών.

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος. ΠΙΘΑΝΕΣ ΑΙΤΙΕΣ (ΔΕΝ ΤΟ ΓΝΩΡΙΖΩ ΑΚΡΙΒΩΣ)

1) Έλλειψη ενημέρωσης
2) Έλλειψη χρόνου
3) Έλλειψη εκπαίδευση

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

Μπορεί ο κάθε επαγγελματίας υγείας να αυθαιρετεί διαφορετικά βήματα στην ακολουθούμενη διαδικασία.

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

1) εκπαίδευση
2) ασφάλεια
3) ανάλυση προβλήματος για να βρεθεί η επίλυση.

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο ΑΓΓΕΛΙΚΗ ΛΕΝΑΚΑΚΗ

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία 25/02/2020.
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ ΚΟΙΝΟΥ ΠΛΑΙΣΙΟΥ ΑΞΙΟΛΟΓΗΣΗΣ
για ΣΥΜΠΛΗΡΩΣΗ ΑΠΟ ΚΟΙΝΩΝΙΚΟΥΣ ΦΟΡΕΙΣ

Υποκριτήριο 8.1 Σκεφτείτε τι επιτυγχάνει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **Μετρήσεων Αντίληψης**

Οι μετρήσεις αντίληψης επικεντρώνονται στην αντίληψη της κοινότητας, για τις επιδόσεις της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από εμπλεκόμενους εκτός Νοσοκομείου. Η μέτρηση της αντίληψης συνιστά ένδειξη της αποτελεσματικότητας των κοινωνικών και περιβαλλοντικών στρατηγικών. Περιλαμβάνει την οπτική γωνία για τη διαφάνεια, τον αντίκτυπο για την ποιότητα ζωής και την ποιότητα της δημοκρατίας, την οπτική για τη δεοντολογία ως προς την υποστήριξη των πολιτών/ασθενών, την προσέγγιση και τα αποτελέσματα για τα κοινωνικά και περιβαλλοντικά θέματα.

Α/Α	Ερώτηση	Απάντηση					
		Καθόλου			(0)		
		Πολύ Λίγο			(1)		
		Λίγο			(2)		
		Πολύ			(3)		
		Πάρα Πολύ			(4)		
		Απόλυτα			(5)		
1	Σε ποιο βαθμό θεωρείτε ότι το κοινό ενημερώνεται για συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)στη βελτίωση της ποιότητας ζωής των πολιτών της περιοχής εντός της οποίας δραστηριοποιείται; (π.χ. πρόγραμμα προαγωγής υγείας, δράσεις για ευπαθείς ομάδες, κ.λπ.)	0	1	2	3	4	5
						✓	
2	Σε ποιο βαθμό κρίνετε τη δημόσια εικόνα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) ως θετική;	0	1	2	3	4	5
							✓
3	Σε ποιο βαθμό κρίνετε ικανοποιητικά τα αποτελέσματα των επαφών και της συνεργασίας της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με τους τοπικούς κοινωνικούς φορείς;	0	1	2	3	4	5
						✓	
4	Σε ποιο βαθμό θεωρείτε ικανοποιητικές τις αλλαγές που επέρχονται στη λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), ως αποτέλεσμα της προσπάθειας ανταπόκρισης στις μεταβολές του κοινωνικού περιβάλλοντος;	0	1	2	3	4	5
					✓		
5	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), την οικονομία της περιοχής εντός της οποίας δραστηριοποιείται; (*π.χ. δημιουργία/προσέλκυση μικρών επιχειρηματικών δραστηριοτήτων που έχουν χωροταξική εγγύτητα, δημιουργία δημόσιων δρόμων ή μέσων μαζικής μεταφοράς που εξυπηρετούν και τους υφιστάμενους οικονομικά δρώντες*).	0	1	2	3	4	5
							✓
6	Σε ποιο βαθμό θεωρείτε ότι επηρεάζει θετικά η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)την κοινωνία της περιοχής εντός της οποίας δραστηριοποιείται, λαμβάνοντας υπόψη την ποιότητα της δημοκρατικής συμμετοχής των πολιτών;	0	1	2	3	4	5
						✓	
7	Σε ποιο βαθμό θεωρείτε ικανοποιητική την υποστήριξη των Α.Μ.Ε.Α. από το τη Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ);	0	1	2	3	4	5
							✓
8	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη λειτουργία της	0	1	2	3	4	5
						✓	

	Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την προστασία του περιβάλλοντος; (*προσπάθειες εξοικονόμησης ενέργειας, χρήση εναλλακτικών πηγών ενέργειας, διαχείριση αποβλήτων, συμμόρφωση σε περιβαλλοντικές προδιαγραφές, κ.τ.λ.*)						
9	Σε ποιο βαθμό θεωρείτε ότι η λειτουργία της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)είναι ανοικτή σε τρίτους και διαφανής; (*π.χ. τήρηση αρχών/αξιών όπως ισότητα, συνέχεια, κ.λπ.*)	0	1	2	3	4	5
							✓
10	Σε ποιο βαθμό θεωρείτε ικανοποιητική τη δημοσιογραφική κάλυψη των δραστηριοτήτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.;	0	1	2	3	4	5
							✓

Υποκριτήριο 8.2 Σκεφτείτε τι επιτυγχάνει την Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), σχετικά με την κοινωνική ευθύνη της, μέσω των αποτελεσμάτων των **μετρήσεων απόδοσης σχετικά με την κοινωνία**

Οι μετρήσεις απόδοσης εστιάζουν στα μέτρα που χρησιμοποιούνται από το Νοσοκομείο για να ελέγξει, να κατανοήσει, να προβλέψει και να βελτιώσει τις επιδόσεις σχετικά με την κοινωνική του ευθύνη. Θα πρέπει να δοθεί μια σαφής ένδειξη της αποτελεσματικότητας των προσεγγίσεων του Νοσοκομείου, για τα κοινωνικά θέματα. Οι μετρήσεις απόδοσης μπορούν να εξετάζουν τη δεοντολογία, τις πρωτοβουλίες και τα αποτελέσματα της πρόληψης των κινδύνων για την υγεία, τις πρωτοβουλίες για την ανταλλαγή γνώσεων, τις πρωτοβουλίες για τη διατήρηση των πόρων και τη μείωση των περιβαλλοντικών επιπτώσεων κ.λπ.

Α/Α	Ερώτηση	Απάντηση					
		Καθόλου	(0)				
		Πολύ Λίγο	(1)				
		Λίγο	(2)				
		Πολύ	(3)				
		Πάρα Πολύ	(4)				
		Απόλυτα	(5)				
1	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι σχέσεις με άλλα (αντίστοιχα της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ)) Τμήματα και κοινωνικούς φορείς, αρμόδιες αρχές, κ.λπ;	0	1	2	3	4	5
							✓
2	Σε ποιο βαθμό κρίνονται ως ικανοποιητικές οι προσπάθειες που καταβάλλει η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ), για την αντιμετώπιση των προβλημάτων ευπαθών ομάδων πληθυσμού; (*συμβολή Γραφείου Προστασίας Δικαιωμάτων Ληπτών Υπηρεσιών Υγείας στις ευπαθείς ομάδες, κοινωνική υπηρεσία, κ.λπ.*)	0	1	2	3	4	5
							✓
3	Σε ποιο βαθμό κρίνετε ικανοποιητική την κάλυψη των θεμάτων της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) από τα Μ.Μ.Ε.; (έχει αναφερθεί η ίδια ερώτηση πιο πάνω πεδίο 10)	0	1	2	3	4	5
							✓
4	Σε ποιο βαθμό κρίνετε ικανοποιητική την συμβολή της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) στον σχεδιασμό, στη χρηματοδότηση και στην υλοποίηση διεθνών προγραμμάτων και στη συμμετοχή των εργαζομένων σε φιλανθρωπικές δραστηριότητες	0	1	2	3	4	5
						✓	
5	Σε ποιο βαθμό ενθαρρύνει την Μονάδα	0	1	2	3	4	5
						✓	

	(Εμφραγμάτων/ΜΝ/ΜΕΘ), τους υπαλλήλους του, αλλά και τους πολίτες/ασθενείς, που έρχονται σε επαφή με αυτό να ασχολούνται με κοινωνικά ζητήματα και να δραστηριοποιούνται στο χώρο της κοινωνίας των πολιτών/ασθενών;						
6	Σε ποιο βαθμό θεωρείτε παραγωγική την ανταλλαγή γνώσης και εμπειριών της Μονάδας (Εμφραγμάτων/ΜΝ/ΜΕΘ) με κοινωνικούς φορείς;	0	1	2	3	4	5
						✓	
7	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ) αναλαμβάνει πρωτοβουλίες πρόληψης κινδύνων υγείας και ατυχημάτων, για τους υπαλλήλους , αλλά και για τους πολίτες/ασθενείς με τους οποίους συναλλάσσεται; (λήψη προληπτικών μέτρων έναντι κινδύνων, καταπολέμηση καπνίσματος, συνεργασία με «φίλιες» δυνάμεις στην αντιμετώπιση Εκτάκτων Αναγκών, παρεμβάσεις Επιτροπής Νοσοκομειακών Λοιμώξεων, κ.λπ.)	0	1	2	3	4	5
						✓	
8	Σε ποιο βαθμό η Μονάδα (Εμφραγμάτων/ΜΝ/ΜΕΘ)έχει εκπονήσει/σχεδιάσει δράσεις για τη διαχείριση των πόρων και για την προστασία του περιβάλλοντος (ανακύκλωση, περιβαλλοντικά πρότυπα, ενέργεια κτλ);	0	1	2	3	4	5
						✓	

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ
ΜΕΤΑ ΤΗΝ ΠΑΡΕΜΒΑΣΗ

Όνομα / Επώνυμο Συμμετέχοντα Χριστοφίδου Ευσταθία

Υπογραφή Συμμετέχοντα _____

Ημερομηνία 28/2/2020
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερώτηση 1:
Παρακαλώ καταγράψτε το κεντρικό πρόβλημα της ποιότητας των παρεχόμενων υπηρεσιών των μονάδων Μεταμόσχευσης Νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων.

Παρόλα των έλλειψη προσωπικού & των χαμηλή χρηματοδότησου του οργανισμών, υπάρχει & εξαιρετικής ενημέρωση & έλλειψη δωρεών.

Ερώτηση 2:
Παρακαλώ περιγράψτε τις αιτίες του προβλήματος.

Ερώτηση 3:
Παρακαλώ περιγράψτε τις συνέπειες/επιπτώσεις του προβλήματος.

Δεν υπάρχει η επιθυμητή ποιότητα στις παροχές νοσηλευτικής φροντίδας.

Ερώτηση 4:
Παρακαλώ αναφέρατε τρεις (το πολύ) τρόπους αντιμετώπισης του προβλήματος.

Όνομα ερευνητή / προσώπου που λαμβάνει το ερωτηματολόγιο _____

Υπογραφή ερευνητή / που λαμβάνει το ερωτηματολόγιο _____

Ημερομηνία _____
ΗΜΕΡΑ/ ΜΗΝΑΣ/ ΕΤΟΣ

Ερωτηματολόγιο CICC

Αγαπητέ/ή συμμετέχων/ουσα στη συνεδρία ομαδικής μοντελοποίησης,

Αυτό το ερωτηματολόγιο αξιολογεί τη χρήση της μεθόδου ομαδικής μοντελοποίησης (GMB) στη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.

Αυτό το ερωτηματολόγιο εξετάζει τον επείγοντα χαρακτήρα του προβλήματος που διακυβεύεται, τα αποτελέσματα των συνεδριών μοντελοποίησης, τις επιπτώσεις των διαφόρων πτυχών της κάθε συνεδρίας, την ποιότητα της διαδικασίας μοντελοποίησης και τις προτάσεις για μελλοντικές συνεδρίες. Σας προσκαλούμε ευγενικά να απαντήσετε στις ερωτήσεις αυτές όσο καλύτερα μπορείτε. Τα αποτελέσματα αυτού του ερωτηματολογίου θα χρησιμοποιηθούν για τη βελτίωση της μεθόδου ομαδικής μοντελοποίησης που χρησιμοποιήθηκε (Group Model Building – GMB). Προτού ξεκινήσετε να αξιολογείτε τις συνεδρίες, θα θέλαμε να σας ζητήσουμε ορισμένες βασικές πληροφορίες.

Όλες οι πληροφορίες είναι εμπιστευτικές.

Η ημερομηνία γέννησής μου είναι 24/2/1964
Είμαι μέλος αυτής της οργάνωσης (Νοσοκομείο) από 1985
Η θέση/δουλειά μου σε αυτόν τον οργανισμό (Νοσοκομείο) είναι Υπολειτουργός Νοσηλευτικής Υπηρεσίας

Σας ευχαριστώ θερμά για την συνεργασία.

Αποτελέσματα της διαδικασίας μοντελοποίησης

Τα ακόλουθα ερωτήματα αποσκοπούν κυρίως στις ομαδικές συζητήσεις που διεξήχθησαν κατά την διάρκεια των συνεδριών μοντελοποίησης. Αυτά τα ερωτήματα αναφέρονται επίσης στα αποτελέσματα της ανάλυσης δεδομένων και των προσομοιώσεων. Οι απαντήσεις για τις ακόλουθες ερωτήσεις εμπίπτουν σε μία από τις πέντε κατηγορίες:

συμφωνώ απόλυτα (5)
συμφωνώ (4)
δε συμφωνώ ούτε διαφωνώ (3)
διαφωνώ (2)
διαφωνώ έντονα (1)

(Προσοχή: αντεστραμμένη κλίμακα Λικερτ, δηλαδή 5→1 αντί 1→5)

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η οπτική μου για το πρόβλημα έχει αυξηθεί λόγω της διαδικασίας μοντελοποίησης.		✓			
2. Πιστεύω ότι, εξαιτίας αυτών των συνεδριών, έχουμε φτάσει σε μια κοινή οπτική για το πρόβλημα.		✓			
3. Συμφωνώ με τα αποτελέσματα / συμπεράσματα που προέκυψαν κατά τη διαδικασία μοντελοποίησης, σε γενικές γραμμές.		✓			
4. Η διαδικασία μοντελοποίησης μου έδωσε μια καλύτερη εικόνα για τη σύνδεση μεταξύ των στοιχείων που συνθέτουν το πρόβλημα.		✓			
5. Το μοντέλο που αναπτύχθηκε ήταν αποτέλεσμα της ενσωμάτωσης διαφορετικών απόψεων και ιδεών των συμμετεχόντων.		✓			
6. Εάν εγώ και άλλοι στην οργάνωση χρησιμοποιούσαμε την ίδια προσέγγιση στο σχεδιασμό και στην αντιμετώπιση των προβλημάτων μας, όλοι θα ακολουθούσαν πιστά αυτό το σχέδιο στα φυσικά συμπεράσματά του.		✓			
7. Ως αποτέλεσμα της διαδικασίας μοντελοποίησης **δεν** είναι ακόμα σαφές για μένα ποιες είναι οι βαθιές αιτίες του προβλήματος.				✓	
8. Η διαδικασία μοντελοποίησης με βοήθησε στην κατανόηση των απόψεων των άλλων συμμετεχόντων.			✓		
9. Δεν επιτεύχθηκε καμία συμφωνία επι των πραγμάτων.				✓	
10. Η χρήση του μοντέλου βοήθησε στην επικοινωνία μεταξύ των συμμετεχόντων σχετικά με το πρόβλημα.		✓			
11. Οι απόψεις μας είναι πιο κοντά λόγω της διαδικασίας μοντελοποίησης.			✓		
12. Θα υποστηρίξω τα συμπεράσματα/πορίσματα/αποφάσεις αυτών των συναντήσεων μπροστά σε άλλα μέλη της οργάνωσής μου.	✓				
13. Η διαδικασία μοντελοποίησης μου έδωσε περισσότερες πληροφορίες για τις διαδικασίες ανατροφοδότησης (μπούμερανγκ/λούπες) που παίζουν ρόλο στο πρόβλημα.		✓			
14. Η διαδικασία μοντελοποίησης μου έδωσε ελάχιστη εικόνα των απόψεων και των ιδεών των άλλων συμμετεχόντων για το πρόβλημα.					✓
15. Ορισμένα μόνο άτομα κυριάρχησαν στις συζητήσεις.				✓	
16. Η διαδικασία μοντελοποίησης δεν μου έδωσε αρκετές πληροφορίες για τις δυνατότητες που έχει η οργάνωσή μου για να βελτιώσει το πρόβλημα.				✓	

17. Θα προσπαθήσω να πείσω και άλλους στην οργάνωσή μου για τη σημασία αυτών των συμπερασμάτων.	*				
18. Η χρήση μοντέλων για την προσέγγιση του προβλήματος είναι αποτελεσματική.		*			
19. Συνολικά, πιστεύω ότι αυτές οι συνεδρίες ήταν επιτυχείς.	*				

Εαν συγκρίνουμε τις συνεδρίες μοντελοποίησης οπου χρησιμοποιήσαμε μοντέλα, με τις κανονικές ομαδικές συναντήσεις/συνεδριάσεις/συζητήσεις/meetings στις οποίες είστε συνηθισμένοι, για παρόμοια προβλήματα όπως το πρόβλημα της ποιότητας που προσπαθήσαμε να καταλάβουμε μαζί, θα λέγατε οτι οι συνεδρίες μοντελοποίησης:

	sa 5	a 4	a/d 3	d 2	sd 1
1. Προσφέρουν περισσότερες γνώσεις σε σχέση με τις κανονικές συναντήσεις εργασίας;	*				
2. Προσφέρουν ταχύτερα ενόραση σε σχέση με τις κανονικές συναντήσεις εργασίας;		*			
3. Οδηγούν σε καλύτερη επικοινωνία μεταξύ των συμμετεχόντων;	*				
4. Οδηγούν ταχύτερα σε μια κοινή οπτική μεταξύ των συμμετεχόντων;		*			
5. Δημιουργούν μια καλύτερη κοινή οπτική μεταξύ των συμμετεχόντων;		*			
6. Οδηγούν ταχύτερα σε μια κοινή δέσμευση των συμμετεχόντων;		*			
7. Δημιουργούν περισσότερη δέσμευση των συμμετεχόντων;	*				

Επιδράσεις των διαφορετικών στοιχείων/πτυχών της μεθόδου Ομαδικής Μοντελοποίησης

Οι συνεδρίες μοντελοποίησης συνδυάζουν διάφορα στοιχεία/πτυχές οι οποίες μπορεί να έχουν συμβάλει με διαφορετικούς τρόπους στο συνολικό αποτέλεσμα των συνεδριών. Στις ακόλουθες ερωτήσεις σας ζητείται να διευκρινίσετε κατά πόσο μια πτυχή συνέβαλε στο συνολικό αποτέλεσμα. Μπορείτε να το κάνετε αυτό βαθμολογώντας κάθε στοιχείο/πτυχή σε μια κλίμακα από -5 έως +5, στην οποία:

-5 = δεν είχε καμιά χρησιμότητα, εμπόδισε τις συνεδρίες.
0 = δεν εμπόδισε, αλλά δεν ήταν καθόλου χρήσιμη.
+5 = συνέβαλε πολύ.

	score -5 to +5
1. Το γεγονός ότι το μοντέλο προβάλλεται / καταγράφεται με τρόπο ορατό για όλους.	+5
2. Το γεγονός ότι ένα άτομο εξω απο την οργάνωση λειτούργησε ως «διευκολυντής ομάδας».	+5
3. Η ευκαιρία για ανοιχτή και εκτενή συζήτηση επι του προβλήματος.	+5
4. Η χρήση του μοντέλου.	+5
5. Γραπτές αναφορές (με ερωτήσεις) μεταξύ των συνεδριών.	+5
6. Συγκέντρωση των δεδομένων που απαιτούνται για το ποσοτικό μοντέλο.	
7. Ανάλυση των δεδομένων.	+5
8. Προσομοίωση, χρησιμοποιώντας το ποσοτικό μοντέλο.	
9. Άλλα, ...	

Ποιότητα των συνεδριών μοντελοποίησης

Οι ακόλουθες ερωτήσεις έχουν ως στόχο την αξιολόγηση της ποιότητας της διαδικασίας μοντελοποίησης. Με τη λέξη 'πρόβλημα' αναφερόμαστε και πάλι στον ορισμό του προβλήματος που χρησιμοποιήθηκε στη διαδικασία μοντελοποίησης: **τη διερεύνηση των μηχανισμών ποιότητας στις μονάδες Μεταμόσχευσης νεφρού, Εντατικής Θεραπείας και Εμφραγμάτων ενός νοσοκομείου.**

	sa 5	a 4	a/d 3	d 2	sd 1
1. Η παρούσα κατάσταση της οργάνωσής μου χαρτογραφήθηκε καλά.		*			
2. Η περιγραφή της επιθυμητής κατάστασης που πρέπει να επιτευχθεί ήταν σωστή.		*			
3. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκε ο σωστός ορισμός του προβλήματος.		*			
4. Στη διαδικασία μοντελοποίησης χρησιμοποιήθηκαν όλες οι σχετικές πληροφορίες.		*			
5. Η ανάλυση των πληροφοριών ήταν σωστή.		*			
6. Όλα τα ζητήματα ή οι προβληματικοί τομείς που έχριζαν προσοχής, διερευνήθηκαν.			*		
7. Στη διαδικασία μοντελοποίησης δεν συζητήθηκαν όλες οι χρήσιμες λύσεων.			*		
8. Στη διαδικασία μοντελοποίησης επεξεργασθήκαμε τα πλεονεκτήματα και τα μειονεκτήματα των πιθανών λύσεων.		*			
9. Η επιλογή της πιο ελπιδοφόρας λύσης(εων) βασίστηκε σε υγιή επιχειρήματα.	*				
10. Στη διαδικασία μοντελοποίησης επιλέχθηκε η καλύτερη λύση(εις).		*			

Προτάσεις για μελλοντικές συνεδρίες

Οι ακόλουθες ερωτήσεις μπορεί να είναι πολύ χρήσιμες για τον προγραμματισμό των μελλοντικών συνεδριών μοντελοποίησης.

Ποια ήταν τα τρία καλύτερα χαρακτηριστικά των συνεδριών;

a) _____

_____

b) _____

_____

c) _____

_____

Ποια ήταν τα τρία πιο απογοητευτικά χαρακτηριστικά ή προβλήματα των συνεδριών;

a) Περιορισμένος χρόνος

_____

b) _____

_____

c) _____

_____

Ποιες συγκεκριμένες προτάσεις θα κάνατε αν οργανωθούν ή επαναληφθούν συνεδρίες όπως αυτές;

a) Καλύτερη προετοιμασία & ενημέρωση, ώστε να το παρακολουθούν περισσότερα άτομα

b) Περισσότερος χρόνος

_____

c) _____

_____

Σας ευχαριστώ και πάλι θερμά για τη συνεργασία σας.